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Especificación del modelo de habilidades, motivación y oportunidades (AMO) como multiplicativo o aditivo y comprobación de su validez en su aplicación a las prácticas de alta implicación de recursos humanos enfocadas a la mejora continua.

## **TESIS DOCTORAL**

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## Resumen

El modelo de habilidades, motivación y oportunidades (modelo AMO) ha sido ampliamente utilizado desde su aparición para investigar la relación entre las prácticas de alta implicación de recursos humanos y los resultados a nivel organizacional o individual. El modelo plantea que los trabajadores desempeñan bien su trabajo si cuentan con las habilidades apropiadas, la motivación adecuada, y las organizaciones les proporcionan las oportunidades necesarias para participar y desarrollar sus capacidades. El modelo articula un sistema que agrupa las prácticas en tres categorías en función de sus objetivos comunes y que aprovecha las sinergias positivas que se producen al implantar prácticas de cada una de las categorías en un mismo contexto.

El objetivo principal de la presente tesis es dilucidar los aspectos del modelo AMO que permitan determinar la relación que existe entre las prácticas de RRHH y la mejora de los resultados de las organizaciones. El objetivo se vehicula a través de preguntas de investigación específicas vinculadas con el planteamiento original de modelo, las conclusiones de los estudios previos, las prácticas de implicación y medidas de rendimiento utilizadas, los factores que afectan a la utilización y rendimiento de los sistemas de RRHH, y los distintos modelos de interacción entre las tres categorías del modelo. Además, a través de métodos estadísticos evaluamos el alcance y difusión de los sistemas de alta implicación en el contexto laboral español, que posee unas particularidades específicas. Finalmente, investigamos qué modelo de interacción predice mejor la satisfacción laboral a nivel individual, el sumativo o el multiplicativo, lo cual constituye una de las grandes cuestiones no resueltas hasta la fecha. La tesis se ha realizado por compendio de artículos. Esta modalidad permite construir el conocimiento de manera gradual mediante una colección de publicaciones independientes, sometidas a los procesos de revisión de revistas académicas, y que se articulan alrededor de un tema central de investigación.

De nuestra investigación se desprende que el modelo AMO proporciona una estructura apropiada para explorar la relación entre la gestión de RRHH y los resultados a distintos niveles. Muchas investigaciones articulan sus análisis en base a las agrupaciones de prácticas planteadas por el modelo, y numerosos estudios confirman los efectos positivos de los sistemas de alta implicación. Sin embargo, no existe un consenso claro que permita generalizar los resultados y establecer una metodología única. De acuerdo con nuestra investigación, existen dos razones. En primer lugar, hay una gran variedad de enfoques metodológicos, que conducen a resultados muy diversos. Por otro lado, el modelo AMO se integra en un sistema de relaciones complejo, donde además de los mecanismos que moderan las relaciones internas de los sistemas de RRHH y los resultados, operan otros factores organizacionales, personales y externos que moldean estas relaciones. Dichos factores son diferentes en cada situación particular y podrían explicar por qué organizaciones con los mismos recursos no obtienen idénticos

resultados. Puesto que existen múltiples realidades, definir políticas que garanticen un modelo de gestión único que se adapte a cualquier situación es complejo. Sin embargo, las evidencias demostradas en la literatura de RRHH juegan sin duda un papel relevante a la hora de tomar decisiones.

Con respecto a la difusión y grado de uso de los sistemas de RRHH en el contexto español, observamos diversos aspectos. Nuestros resultados indican que existe poca influencia de incentivos económicos basados en el rendimiento, quizás debido a la rigidez de la legislación laboral. Los modelos planteados, relacionados con la aplicación formal de sistemas de alta implicación tampoco predicen en gran medida los resultados individuales, aunque sí apuntan a que la categoría de habilidades, y en menor medida la de oportunidades tienen un efecto mayor sobre la satisfacción laboral. Sin embargo, observamos que muchos empleados tienen percepciones positivas en relación con la capacidad de participación, el trabajo en equipo, el intercambio de información, o la formación en el puesto de trabajo, que podrían no estar vinculadas con el diseño y la implantación formal de sistemas de RRHH. En este sentido, algunos estudios evidencian las diferencias entre España y otros países de referencia en relación con la utilización de prácticas de alta implicación.

Esta tesis ofrece diversas contribuciones. En primer lugar, realizamos una síntesis exhaustiva de las características del modelo AMO y sus implicaciones teóricas y prácticas, y señalamos los aspectos que dificultan la generalización de resultados. El conocimiento profundo del modelo actúa como guía de futuras investigaciones. En segundo lugar, analizamos el grado de uso de los sistemas de alta implicación en el contexto español, señalando las posibles carencias. Nuestras conclusiones pueden fomentar el desarrollo de medidas para incrementar la participación y autonomía de los empleados, la satisfacción laboral y la competitividad, así como para romper las barreras institucionales y culturales que ralentizan la implantación de los sistemas de alta implicación. Por último, evaluamos la validez de los enfoques sumativo y multiplicativo del modelo para predecir la satisfacción laboral. Contribuimos de este modo al creciente interés por las percepciones de los empleados y los resultados a nivel individual, así como a la conveniencia de explorar enfoques distintos al aditivo para confirmar las supuestas sinergias de los sistemas de alta implicación.

**Palabras clave:** Gestión de recursos humanos; participación; mejora continua; modelo AMO; habilidades; motivación; oportunidades; prácticas de alta implicación; sistemas de alta implicación; satisfacción en el trabajo; modelos multiplicativos y sumativos.

## Resum

El model d'habilitats, motivació i oportunitats (model AMO, sigles en anglés) ha sigut àmpliament utilitzat des de la seua aparició per a investigar la relació entre les pràctiques d'alta implicació de recursos humans i els resultats a nivell organitzacional o individual. El model planteja que els treballadors exerceixen bé el seu treball si compten amb les habilitats apropiades, la motivació adequada, i les organitzacions els proporcionen les oportunitats necessàries per a participar i desenvolupar les seues capacitats. El model articula un sistema que agrupa les pràctiques en tres categories en funció dels seus objectius comuns i que aprofita les sinergies positives que es produeixen en implantar pràctiques de cadascuna de les categories en un mateix context.

L'objectiu principal de la present tesi és dilucidar els aspectes del model AMO que permeten determinar la relació que existeix entre les pràctiques de RRHH i la millora dels resultats de les organitzacions. L'objectiu es vehicula a través de preguntes d'investigació específiques vinculades amb el plantejament original de model, les conclusions dels estudis previs, les pràctiques d'implicació i mesures de rendiment utilitzades, els factors que afecten la utilització i rendiment dels sistemes de RRHH, i els diferents models d'interacció entre les tres categories del model. A més, a través de mètodes estadístics avaluem l'abast i difusió dels sistemes d'alta implicació en el context laboral espanyol, que posseeix unes particularitats específiques. Finalment, investiguem quin model d'interacció prediu millor la satisfacció laboral a nivell individual, el sumatiu o el multiplicador, la qual cosa constitueix una de les grans qüestions no resoltes fins hui. La tesi s'ha realitzat per compendi d'articles. Aquesta modalitat permet construir el coneixement de manera gradual mitjançant una col·lecció de publicacions independents, sotmeses als processos de revisió de revistes acadèmiques, i que s'articulen al voltant d'un tema central d'investigació.

De la nostra investigació es desprén que el model AMO proporciona una estructura apropiada per a explorar la relació entre la gestió de RRHH i els resultats a diferents nivells. Moltes investigacions articulen les seues anàlisis sobre la base de les agrupacions de pràctiques plantejades pel model, i nombrosos estudis confirmen els efectes positius dels sistemes d'alta implicació. No obstant això, no existeix un consens clar que permeta generalitzar els resultats i establir una metodologia única. D'acord amb la nostra investigació, existeixen dues raons. En primer lloc, hi ha una gran varietat d'enfocaments metodològics, que condueixen a resultats molt diversos. D'altra banda, el model AMO s'integra en un sistema de relacions complex, on a més dels mecanismes que moderen les relacions internes dels sistemes de RRHH i els resultats, operen altres factors organitzacionals, personals i externs que modelen aquestes relacions. Aquests factors són diferents en cada situació particular i podrien explicar per quines organitzacions amb els mateixos recursos no obtenen idèntics resultats. Com que existeixen múltiples realitats, definir polítiques que garantisquen un model de gestió únic que s'adapte a qualsevol situació és complex. No obstant això, les evidències demostrades en la literatura de RRHH juguen sens dubte un paper rellevant a l'hora de prendre decisions.

Respecte a la difusió i grau d'ús dels sistemes de RRHH en el context espanyol, observem diversos aspectes. Els nostres resultats indiquen que existeix poca influència d'incentius econòmics basats en el rendiment, potser a causa de la rigidesa de la legislació laboral. Els models plantejats, relacionats amb l'aplicació formal de sistemes d'alta implicació tampoc prediuen en gran manera els resultats individuals, encara que sí que apunten al fet que la categoria d'habilitats, i en menor mesura la d'oportunitats tenen un efecte major sobre la satisfacció laboral. No obstant això, observem que molts empleats tenen percepcions positives en relació amb la capacitat de participació, el treball en equip, l'intercanvi d'informació, o la formació en el lloc de treball, que podrien no estar vinculades amb el disseny i la implantació formal de sistemes de RRHH. En aquest sentit, alguns estudis evidencien les diferències entre Espanya i altres països de referència en relació amb la utilització de pràctiques d'alta implicació.

Aquesta tesi ofereix diverses contribucions. En primer lloc, realitzem una síntesi exhaustiva de les característiques del model AMO i les seues implicacions teòriques i pràctiques, i assenyalem els aspectes que dificulten la generalització de resultats. El coneixement profund del model actua com a guia de futures investigacions. En segon lloc, analitzem el grau d'ús dels sistemes d'alta implicació en el context espanyol, assenyalant les possibles mancances. Les nostres conclusions poden fomentar el desenvolupament de mesures per a incrementar la participació i autonomia dels empleats, la satisfacció laboral i la competitivitat, així com per a trencar les barreres institucionals i culturals que alenteixen la implantació dels sistemes d'alta implicació. Finalment, avaluem la validesa dels enfocaments sumatiu i multiplicador del model per a predir la satisfacció laboral. Contribuïm d'aquesta manera al creixent interès per les percepcions dels empleats i els resultats a nivell individual, així com a la conveniència d'explorar enfocaments diferents a l'additiu per a confirmar les suposades sinergies dels sistemes d'alta implicació.

**Paraules clau:** Gestió de recursos humans; participació; millora contínua; model AMO; habilitats; motivació; oportunitats; pràctiques d'alta implicació; sistemes d'alta implicació; satisfacció en el treball; models multiplicadors i sumatius.



## Abstract

The abilities, motivation, and opportunities model (AMO model) has been widely used to investigate the relationship between high-involvement work practices (HIWP) and results at the organizational or individual level. The model states that workers perform well if they have the right abilities and motivation, and organizations offer the necessary opportunities to participate and develop their abilities. The model provides a system that groups HR practices into three categories according to their common objectives and takes advantage of the positive synergies that occur when implementing practices of each of the categories in the same context.

The main objective of this thesis is to elucidate the aspects of the AMO model that allow determining the relationship between HR practices and organizational results improvement. The objective is conveyed through specific research questions linked to the model's original proposal, the conclusions of previous studies, the HIWP and performance measures used, the factors that affect the use and performance of HR systems, and the interaction approaches between the three categories of the model. In addition, we assess the scope of high-involvement work systems (HIWS) in the Spanish labour context, which has specific particularities. Finally, we compare the predictive capacity of the summative and multiplicative approaches at the individual level, which is one of the unresolved questions to date. The thesis has been done into a compendium of articles. This modality allows building knowledge gradually through a collection of independent publications articulated around a central research topic and subject to academic journals' review processes.

Our research shows that the AMO model provides an appropriate structure for exploring the relationship between HR management and outcomes at different levels. Many studies articulate their analyses based on the groupings of practices proposed by the model, and numerous studies confirm the positive effects of HIWS. However, there is no clear consensus to generalize the results and establish a single methodology. According to our research, there are two main reasons. First, there is a wide range of methodological approaches, which lead to very mixed results.

On the other hand, the AMO model is integrated into a complex system of relationships, where in addition to the mechanisms that moderate the internal relationships of HR systems and the results, other organizational, personal, and external factors that shape these relationships operate. These factors differ in each situation and could explain why organizations with the same resources do not obtain identical results. Since there are multiple realities, defining policies guaranteeing a single management model that adapts to any situation is complex. However, the evidence demonstrated in the HR literature undoubtedly plays an important role when making decisions.

We observe several facets regarding the use of HR systems in the Spanish context. Our results indicate little influence of performance-based incentives, perhaps due to the rigidity of labour legislation. Concerning the formal implementation of HIWS, our proposed models do not predict, to a large extent, variations in job satisfaction, although abilities and opportunities categories have greater effects than motivation. Nevertheless, many employees have positive perceptions regarding engagement, teamwork, information sharing, or on-the-job training, which may not be linked to the formal implementation of HR systems. In this sense, some studies show differences between Spain and other reference countries concerning the use of HIWP.

This thesis offers several contributions. First, we offer an exhaustive synthesis of the AMO model features and its theoretical and practical implications, and we point out the aspects that hinder the generalization of results. In-depth knowledge of the model acts as a guide for future research. Secondly, we analyse the degree of use of HIWS in the Spanish context, pointing out the possible shortcomings. Our conclusions may promote the development of policies to increase employee autonomy and participation, job satisfaction, and competitiveness, as well as to break down the institutional and cultural barriers that slow the implementation of HIWS. Finally, we assess the validity of the model's summative and multiplicative approaches to predicting job satisfaction. We thus contribute to the growing interest in employee perceptions and outcomes at the individual level and the desirability of exploring approaches other than additive to confirm the supposed synergies of HIWS.

**Keywords:** Human resources management; employee participation; continuous improvement; AMO model; abilities; motivation; opportunities; high involvement work practices; high involvement work systems; job satisfaction; summative and multiplicative models.

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## Capítulo 1: Introducción



## 1. Introducción

El objetivo principal de la presente tesis es determinar la relación que existe entre las prácticas de alta implicación de recursos humanos y el rendimiento organizacional. Dicha relación se enmarca en el modelo de habilidades, motivación y oportunidades (AMO, por sus siglas en inglés), que constituye el objeto central de estudio. La tesis se ha elaborado mediante compendio de artículos, y las preguntas de investigación planteadas en dichos artículos están relacionadas con las características del modelo AMO y su validez para explicar la relación entre las prácticas de alta implicación y el rendimiento; el grado de aceptación y uso del modelo en la literatura de gestión de recursos humanos; el alcance y difusión de los programas de RRHH en España enfocados a la mejora continua; las interacciones y posibles sinergias entre las distintas prácticas que habitualmente forman cada una de las tres dimensiones del modelo; la relación entre el modelo AMO y la satisfacción en el trabajo como medida de resultado a nivel individual; y los factores internos y externos susceptibles de influir en dicha relación.

Nuestra motivación inicial es comprender y tomar decisiones acerca de cómo la gestión de recursos humanos puede influir en el bienestar y rendimiento de los empleados. El factor humano es un elemento esencial y diferenciador en numerosas organizaciones y las aportaciones realizadas en esta área de conocimiento justifican plenamente la investigación. Puesto que el modelo AMO está presente en numerosos estudios que investigan la relación entre prácticas de recursos humanos y rendimiento, consideramos que es importante comprender completamente su funcionamiento y determinar, en base a estudios previos y a los análisis que se plantean a lo largo de esta tesis, posibles conclusiones científicas sólidas que puedan ser recibidas por la comunidad científica y empresarial para introducir elementos de mejora que tengan un impacto positivo tanto en la satisfacción de los empleados como en los resultados de las organizaciones.

La investigación científica en el ámbito de los recursos humanos es especialmente compleja porque, además de los factores contextuales e intrínsecos que inciden en las organizaciones, entra en juego también el factor humano. El ser humano es muy diverso y todos estamos influidos de manera determinante por nuestro contexto cultural y social; por factores cognitivos, genéticos y educativos que moldean nuestra conducta y personalidad; y por factores de desarrollo y experienciales que nos transforman en seres dinámicos en permanente evolución. En este sentido, es complicado definir un modelo estándar de funcionamiento perfectamente adaptable a cualquier contexto, y quizás por ello existen conclusiones contradictorias en la literatura previa. No obstante, asumiendo las dificultades, consideramos que es interesante identificar los beneficios intrínsecos y comprobados de los sistemas de alta implicación, conocer en qué medida se utilizan en el contexto laboral español, y determinar el modelo óptimo de funcionamiento del modelo AMO. Si, como esperamos, podemos contribuir a incrementar el conocimiento y proporcionar herramientas específicas a las organizaciones para introducir mejoras, sin lugar a duda este trabajo habrá merecido la pena.

## 2. Contextualización de la investigación

### 2.1 Las prácticas de alta implicación y el modelo AMO

La gestión eficiente de los recursos humanos es una herramienta clave para garantizar el buen funcionamiento de las organizaciones, especialmente en el mercado globalizado actual, que se caracteriza por su competitividad y por estar sujeto a los ciclos económicos y sociopolíticos. En los últimos años, un gran número de empresas ha optado por implantar procedimientos que fomentan la participación de los empleados, motivadas por estudios que apuntan a que la implicación de los empleados puede mejorar notablemente el rendimiento en las organizaciones (Appelbaum et al., 2000; Bayo-Moriones et al., 2015; Huselid, 1995; Jiang, Lepak, Hu, et al., 2012; Marín-García, 2013). Estos procedimientos son variados y abarcan desde sistemas de sugerencias o encuestas de opinión hasta programas complejos como círculos de calidad, grupos autónomos de trabajo o miniempresas (Marín-García, Juárez-Tarraga, et al., 2018; Marín-García & Conci, 2013). Las prácticas de alta implicación –también conocidas como programas de participación– hacen referencia a las prácticas de recursos humanos destinadas a dotar a los empleados de las habilidades, información, incentivos y empoderamiento necesarios para contribuir a crear organizaciones más participativas y flexibles, así como involucrar a los empleados en los procesos de decisión operativos y de gestión (Guthrie et al., 2002; Kalleberg, 2006; Marín-García & Conci, 2012, 2013). El objetivo de estos programas es transformar los recursos humanos en una ventaja competitiva y de este modo optimizar el rendimiento de la organización. Para ello, es esencial que gocen del respaldo de la organización y se integren en sus líneas estratégicas (Guthrie et al., 2002; Marín-García & Conci, 2012). En la literatura de recursos humanos es frecuente encontrar los términos anglosajones para referirse a estas prácticas. Aunque su traducción más precisa es *high-involvement work practices*, muchos estudios se refieren a ellas también como *high-performance work practices*, *high-commitment work practices* o *innovative work practices* (Bayo-Moriones & Galdon-Sanchez, 2010; Lawler III, 1986, 1992). Algunos autores sostienen que pueden ser tratados como sinónimos puros (Melián-González & Verano-Tacorante, 2004); sin embargo, otros autores sostienen que estos términos no son siempre intercambiables, ya que existen diferencias entre políticas de recursos humanos destinadas a fomentar el compromiso de los empleados y aquellas destinadas a mejorar los resultados (Boon et al., 2019).

Existe un amplio rango de prácticas de alta implicación (Perello-Marin & Ribes-Giner, 2014) y, hasta la fecha, no existe una lista clara al respecto, ni tampoco una metodología exclusiva para medir su grado de uso (D. E. Guest, 2001; Wood & de Menezes, 2008). Por tanto, no es extraño que en la literatura de recursos humanos se hallen conclusiones contradictorias (Marin-Garcia & Conci, 2009). La tipología y el número de prácticas de alta implicación consideradas varía considerablemente en función de cada investigación,



incluso en aquellas donde existe un sistema de agrupación con la misma denominación. En algunos estudios se señala asimismo la existencia de prácticas, habitualmente etiquetadas como “otras”, que engloban prácticas menos utilizadas. En los últimos años, existe la tendencia de incluir en esta categoría conceptos más abstractos como por ejemplo liderazgo transformacional, respaldo de los superiores, confianza, lealtad o equidad (Boon et al., 2019). Además, existe cierta imprecisión en determinar los elementos, las escalas de medidas y el alcance que definen a una práctica de recursos humanos, o en conocer si el efecto producido es causado por la combinación de prácticas o por la inclusión de variables relacionadas (Boon et al., 2019). La imprecisión teórica y empírica en la conceptualización de los sistemas de recursos humanos y la falta de claridad sobre los niveles o los ítems utilizados podrían resultar en escalas ambiguas que pueden no representar el mismo constructo (Strauss & Smith, 2009).

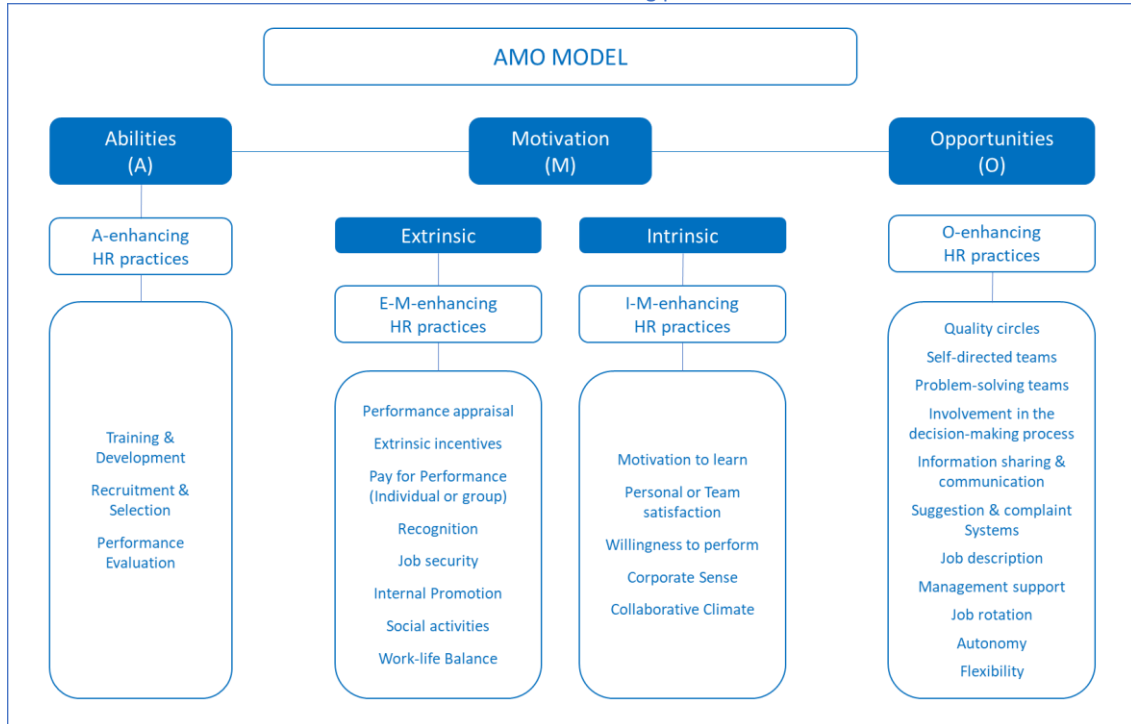
Pese a todo, el número de prácticas consideradas se ha reducido sensiblemente en los últimos años, lo cual sugiere un principio de acuerdo en la literatura para homogeneizar las investigaciones y poder extraer conclusiones más sólidas (Boon et al., 2019). En esta línea, sí existe un cierto consenso en agrupar las prácticas en diferentes categorías, y muchos autores señalan la existencia de prácticas fundamentales que aparecen en la mayoría de las investigaciones (Marín-García & Conci, 2013; Shih et al., 2007). Una de las agrupaciones comúnmente aceptadas es la que considera cuatro diferentes constructos: sistemas de comunicación o información compartida con los empleados para la toma de decisiones; programas de formación sistemática para garantizar las competencias y habilidades adecuadas; sistemas de incentivos para fomentar la motivación y la participación; e iniciativas organizacionales para empoderar a los empleados y que se alineen con los objetivos de la empresa (Lawler III, 1986; Marín-García & Conci, 2012). Otros autores agrupan las prácticas según las funciones principales de la gestión de recursos humanos: procesos de selección; formación y entrenamiento de los empleados; compensación; y evaluación del desempeño (Batt, 2002; Boselie et al., 2005). A estas cuatro prácticas, algunos autores añaden dos más: autonomía en el trabajo y participación (Siddique et al., 2019; Tensay & Singh, 2020). Finalmente, hay un número de estudios que consideran ocho prácticas: autonomía, trabajo en equipo, formación, incentivos basados en el rendimiento, sistemas de selección, apoyo de la dirección, intercambio de información y participación en los procesos de decisión (Appelbaum et al., 2000; Combs et al., 2006; Ho & Kuvaas, 2020; Ramsay et al., 2000).

Clasificar las prácticas en diferentes categorías es el primer paso para construir sistemas coherentes, cuyo objetivo es aprovechar las sinergias que se producen al implantar diversas prácticas en el mismo contexto para reforzar el impacto individual de cada una de ellas (Appelbaum et al., 2000; Bayo-Moriones & Bello-Pindado, 2021; Bayo-Moriones & Galdon-Sanchez, 2010; Della Torre & Solari, 2013; Marín-García & Conci, 2012; Rabl et al., 2014). A modo de ejemplo, implantar grupos de trabajo autónomos sin el apoyo de la dirección o sin las capacidades necesarias de los participantes, reducirá los beneficios esperados del trabajo en equipo (Kroon et al., 2013; MacDuffie, 1995). Como

sucede con las prácticas de recursos humanos, en la literatura es habitual encontrar los términos anglosajones para referirse a estos sistemas: *high-involvement work systems*, *high-performance work systems*, *high-commitment management* o *HR practices configurations* (Arthur, 1994; J.-H. Choi, 2014; Delery, 1998).

Uno de los sistemas más conocidos es el modelo AMO, que sugiere que los trabajadores desempeñarán bien su trabajo si tienen las habilidades necesarias, la motivación adecuada, y la organización provee las oportunidades necesarias para participar y desarrollar sus capacidades (Appelbaum et al., 2000; Bailey, 1993a). (Boselie, 2010; Boxall & Purcell, 2003; Marín-García, 2013). El modelo AMO agrupa las prácticas de recursos humanos en tres categorías en función de sus objetivos comunes (Beltrán-Martín & Bou-Llusar, 2018): las prácticas que desarrollan los conocimientos, competencias y habilidades de los empleados; las destinadas a promover la implicación de los empleados a través de la motivación intrínseca y extrínseca; y las que fomentan un clima de participación e implicación y aseguran el diseño adecuado de los puestos de trabajo (Appelbaum et al., 2000; Bailey, 1993b; Boselie, 2010; Boxall & Purcell, 2003; J.-H. Choi, 2014; Marín-García, Miralles, et al., 2011; Marín-García & Conci, 2013; Raidén et al., 2006). Estas categorías son independientes hasta cierto punto, puesto que los límites que las separan son en ocasiones difusos. A modo de ejemplo, podemos mejorar las habilidades de los empleados implantando prácticas relacionadas con la formación, como también lo podemos hacer mediante el trabajo en equipo, que habitualmente se considera una práctica de la categoría de oportunidades (Marín-García & Martínez-Tomas, 2016). La ventaja del modelo AMO es que proporciona un marco teórico estructurado que integra las prácticas de manera coherente y, además, establece desde su propia concepción un modelo de interacción que contempla las complejas relaciones entre las tres categorías y el rendimiento, considerando implícitamente las posibles sinergias (Beltrán-Martín & Bou-Llusar, 2018; Marín-García & Martínez-Tomas, 2016). En el gráfico 1 se muestran ejemplos de prácticas de alta implicación, consideradas en algunos estudios, y agrupadas en cada una de las categorías del modelo AMO.

Gráfico 1: AMO-Enhancing practices

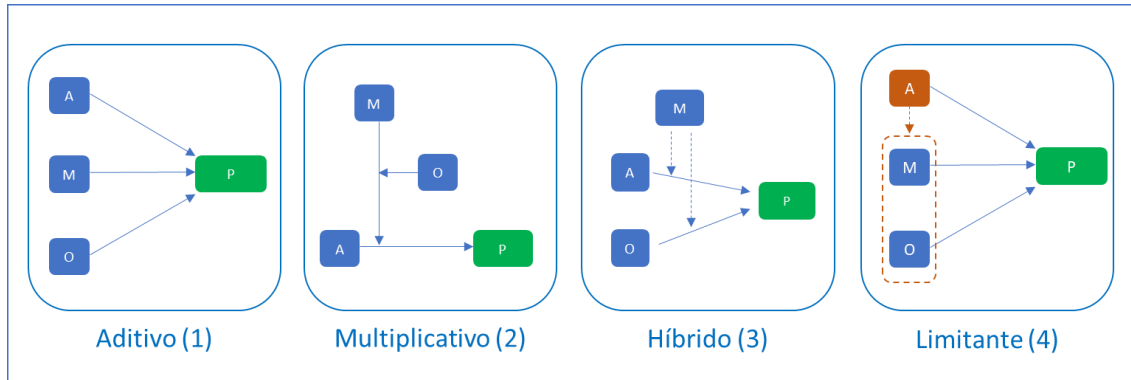


Fuente: elaboración propia

Desde su planteamiento, el modelo ha sido ampliamente utilizado en el área de gestión de recursos humanos para investigar la relación entre las prácticas de recursos humanos y el rendimiento (Beltrán-Martín & Bou-Llugar, 2018; Marín-García & Martínez-Tomas, 2016), así como guía de uso en las organizaciones para escoger las prácticas (Bos-Nehles et al., 2013). Algunos estudios han demostrado empíricamente la validez del modelo (Appelbaum et al., 2000; Huselid, 1995; Iddekinge et al., 2018; Kaufman, 2015; Obeidat et al., 2010). Sin embargo, en numerosas ocasiones se han encontrado resultados contradictorios debido, entre otros, a la gran diversidad de metodologías y contextos utilizados; la heterogeneidad de las prácticas de recursos humanos, los factores contextuales y los elementos de control propuestos; o los distintos enfoques del concepto de rendimiento (Boon et al., 2019; Marín-García & Martínez-Tomas, 2016). En este sentido, una de las grandes cuestiones no resueltas hasta el momento, y a la que tratamos de dar respuesta en nuestro estudio, es determinar cómo interactúan las tres categorías de prácticas (habilidades, motivación y oportunidades) (Demortier et al., 2014; Knies & Leisink, 2014). Como explicamos con detalle en el cuarto artículo de esta tesis, existen diferentes perspectivas al respecto: el enfoque aditivo, que considera que las categorías son independientes y pueden por sí solas contribuir a un mejor rendimiento; el enfoque multiplicativo, que argumenta que las tres categorías deben estar presentes para asegurar el rendimiento y si una de ellas tiene niveles bajos afecta de manera determinante al resultado; el enfoque híbrido, que propone que hay categorías que afectan directamente al rendimiento, y otras que moderan este efecto; y otros que hablan de categorías capaces de limitar el efecto, o del concepto de necesario y suficiente, en el que las categorías pueden actuar como cuello de botella. El gráfico 2 muestra ejemplos de estas relaciones: enfoque aditivo (1); multiplicativo (2);

híbrido, en las que las habilidades y las oportunidades tienen un efecto directo sobre el rendimiento, moderado por la motivación (3); con efecto limitante, en el que las habilidades, al ser el factor más bajo, limitan el efecto de la motivación y las oportunidades (4)

Gráfico 2: Modelos de interacción AMO



Fuente: elaboración propia

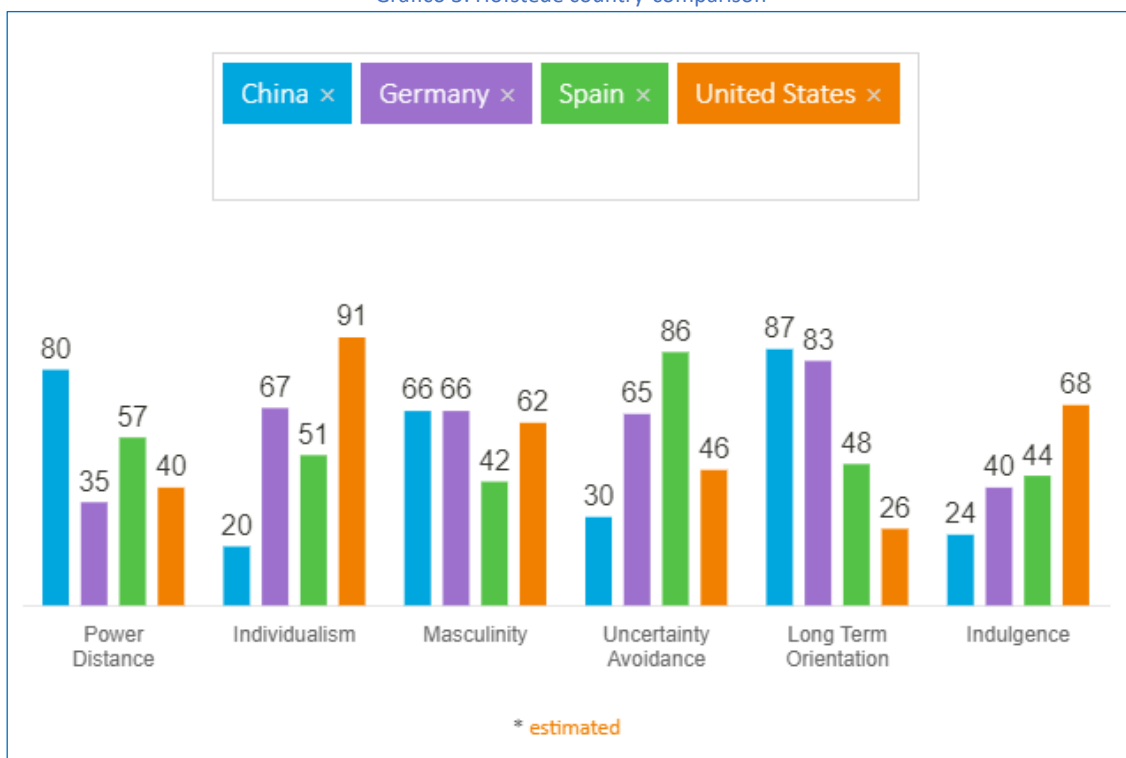
## 2.2 Ámbito de la investigación

El ámbito de la investigación se centra especialmente en el contexto laboral español y, por tanto, en los artículos de esta tesis que contienen análisis estadísticos, se han utilizado datos de trabajadores españoles extraídos de distintas bases de datos. El modelo AMO, sin embargo, fue desarrollado y probado por primera vez en el contexto laboral estadounidense (Appelbaum et al., 2000), cuyas características difieren en muchos aspectos al caso español. Este hecho debe ser tenido en cuenta en las investigaciones relativas al área de recursos humanos, dado que los factores contextuales o socioculturales pueden influir en los resultados y de este modo dificultar la generalización de los resultados. No obstante, es importante contribuir a desarrollar un marco de conocimiento científico común, sobre el que más adelante puedan realizarse, si es necesario, las adaptaciones pertinentes. Aunque explicar con detalle las diferencias entre los contextos laborales de cada país sería objeto de un trabajo muy amplio, es conveniente resaltar que existen diferencias notables entre la legislación laboral estadounidense y la de los países de la Unión Europea en general, y el caso de España en particular. Estas diferencias cubren ámbitos tan diversos como la distribución y estructura salarial, los derechos laborales, la flexibilidad, la jornada laboral y permisos retribuidos, el marco de contratación y despido, las relaciones organizacionales e interpersonales, o las propias aspiraciones y demandas de los empleados.

El mercado laboral español tiene unas particularidades específicas. En primer lugar, el nivel de desempleo se mantiene constantemente entre los más altos de la Unión Europea; y afecta en mayor medida a algunos colectivos, como por ejemplo los jóvenes. Esta situación está generada en gran medida por la alta tasa de temporalidad, que genera una alta inestabilidad, así como una gran barrera entre contratos indefinidos y temporales en relación con los costes de despido (Bentolila et al., 2012; Ryu, 2018), que provoca además que la destrucción de empleo de los ciclos recesivos afecte en mayor

medida a los contratos temporales (Banerji et al., 2015; Costain et al., 2012). Los ciclos negativos afectan asimismo en mayor medida a los empleados menos cualificados, las personas migrantes y las mujeres (Cebolla-Boado et al., 2019; Farré et al., 2021; Nicodemo & Ramos, 2012). Al respecto, y aunque se ha reducido en los últimos años, se ha documentado la existencia de una brecha de género (De La Rica et al., 2008; Murillo Huertas & Simón, 2014; Navarro-Gómez & Rueda-Narvaez, 2015; Simón & Murillo, 2014), así como de un techo de cristal que genera diferencias de género en los salarios más elevados (Antón & de Bustillo, 2015; Felgueroso et al., 2008). Por otro lado, aunque se ha reducido en las últimas décadas, aún existe en el contexto español un porcentaje considerable de personas sin estudios superiores, así como una elevada tasa de abandono escolar, en comparación con otros países de la OCDE (OECD, 2021). Este hecho se traduce en una menor cualificación del capital humano, que puede tener relación con que en España exista un menor crecimiento de la productividad si se compara con el resto de los países de la UE. Además, como sucede en otras economías avanzadas, el envejecimiento poblacional y la baja tasa de natalidad supondrán en el futuro una mayor presión sobre los costes laborales y el empleo (Hernández de Cos, 2020). Asimismo, es importante resaltar la elevada rigidez del mercado laboral español. Algunos autores consideran que una fuerte regulación, junto con el impacto de la negociación colectiva, proporcionan estabilidad y disminuyen la desigualdad laboral, especialmente en los niveles más bajos de la distribución salarial (Felgueroso et al., 2008; Simón, 2009). Sin embargo, otros autores señalan que la regulación laboral existente se traduce en falta de flexibilidad en los procesos de contratación y rescisión de contratos, cuyo impacto es negativo para la tasa de desempleo (Bande & Fernández, 2011; Peraita, 2005). No obstante, cabe indicar que muchas de las reformas laborales actuales y futuras están condicionadas por las exigencias de la Comisión Europea. A modo de ejemplo, los fondos de recuperación europeos están condicionados a la puesta en marcha de medidas para modernizar el marco laboral español o destinadas a atajar la alta temporalidad. Finalmente, es conveniente reseñar que el mercado laboral se desarrolla dentro de un marco socioeconómico y unos valores culturales específicos de cada país. Según algunos estudios relacionados con las dimensiones culturales de una sociedad (Hofstede, 1991), la sociedad española acepta las diferencias jerárquicas; es menos individualista que otros países europeos; no es excesivamente competitiva; necesita normas para gestionar la incertidumbre; y tiene una orientación a corto y medio plazo (Kooyers, 2016). Vemos representada esta idea en el gráfico 3, donde se muestran las diferencias entre España, Estados Unidos, Alemania y China, que son representativos de modelos socioeconómicos muy diversos.

Gráfico 3: Hofstede country-comparison



Fuente: <https://www.hofstede-insights.com/country-comparison/>

### 2.3 Fuentes de información

En el transcurso de la investigación se han utilizado diversas fuentes de información. En el primer artículo, al tratarse de una revisión sistemática de literatura, hemos utilizado bases de datos de referencias bibliográficas para localizar los estudios relacionados con los objetivos de la investigación, como por ejemplo Scopus, Web of Science, Dialnet o Google Scholar. Asimismo, en el resto de artículos hemos utilizado dichas bases de datos como paso previo al desarrollo de la investigación. El objetivo es recopilar la producción científica disponible hasta el momento de iniciar el estudio, y así conocer en profundidad las propuestas, resultados, enfoques metodológicos o teóricos, y conclusiones de otros autores. Este trabajo previo es necesario para construir un marco teórico adecuado y establecer preguntas de investigación o hipótesis pertinentes.

En los artículos donde ha sido necesario realizar análisis estadísticos sobre una muestra de población, hemos seleccionado fuentes de información que permiten explorar las preguntas de investigación planteadas. De este modo, en el segundo y tercer artículo hemos utilizado las últimas series disponibles –en el momento de elaboración del artículo– de la encuesta de estructura salarial (EES) realizada en el marco de la Unión Europea y publicada en España por el Instituto Nacional de Estadística (INE). En el cuarto artículo, decidimos utilizar los datos disponibles relativos a España del programa de evaluación de competencias de adultos, coordinado por la organización para la cooperación y el desarrollo económicos (OCDE) y que se ha realizado hasta el momento en 35 países. Pese a que hemos realizado los análisis con datos de fuentes secundarias, que contienen preguntas específicas sobre las que no podemos intervenir o modificar,

consideramos que ambas encuestas proporcionan una muestra sin sesgos y altamente representativa de la población; y con una amplitud que difícilmente hubiéramos podido alcanzar con nuestros propios medios. En las tablas 1 y 2 presentamos un breve resumen de cada fuente de información, que pueden ser consultas con más detalle en la sección de metodología de cada uno de los artículos.

Tabla 1: Encuesta de estructura salarial (EES) - INE

<b>Denominación</b>	<b>Encuesta de estructura salarial (EES)</b>
<b>Organismo</b>	Instituto Nacional de Estadística (INE) – Coordinado por la UE
<b>Periodicidad</b>	Cada cuatro años
<b>Series disponibles</b>	1995, 2002, 2006, 2010, 2014, 2018
<b>Descripción</b>	Es una investigación sobre la estructura y distribución de los salarios de, que se realiza en todos los Estados miembros de la Unión Europea. Recoge los conceptos salariales de manera individualizada, así como una serie de variables relacionadas con el trabajador como el nivel de estudios, la edad, el sexo, la antigüedad, el tipo de contrato, o la ocupación. Además, recoge variables de la organización, como el mercado principal, el tamaño, el tipo de convenio colectivo, o el carácter público o privado.
<b>Objetivos</b>	Conocer los niveles salariales y su distribución. Determinar la estructura salarial, su composición, las variables que influyen en ella y la cuantía en que lo hacen.
<b>Metodología</b>	Muestreo estratificado en 2 etapas: 1ª etapa: selección de centros de trabajo considerando cada categoría de la Clasificación Nacional de Ocupaciones (CNO) como población independiente. Cada categoría del CON se estratifica por comunidades autónomas e intervalos en función del tamaño del centro de trabajo. 2ª etapa: selección de muestra aleatoria en cada centro de trabajo. Los datos los facilita la empresa.
<b>Cobertura</b>	Países de la UE
<b>Cobertura en España</b>	Ámbito geográfico: todo el territorio nacional, con resultados desagregados por comunidades autónomas. Ámbito poblacional: Trabajadores por cuenta ajena que presten servicios en centros de cotización, y que hayan estado de alta en la Seguridad Social durante el mes de referencia. Se excluye todo el personal cuya remuneración no sea principalmente en forma de salario, sino por beneficios o comisiones.
<b>Fuente</b>	<a href="https://www.ine.es/index.htm">https://www.ine.es/index.htm</a>

Fuente: elaboración propia

Tabla 2: Programa de evaluación de competencias de adultos (PIAAC)

<b>Denominación</b>	<b>Programa de Evaluación de Competencias de Adultos (PIAAC)</b>
<b>Organismo</b>	Ministerio de Educación y Formación Profesional – Coordinado por OCDE
<b>Periodicidad</b>	Indeterminada
<b>Series disponibles</b>	Primer ciclo: 2011-2018 (3 rondas disponibles) *Segundo ciclo: 2018-2024 (en proceso, resultados no publicados)
<b>Descripción</b>	Es una encuesta diseñada para proporcionar información sobre algunas de las competencias esenciales en la sociedad y cómo estas se utilizan en el ámbito laboral y cotidiano. Evalúa el nivel de competencia de la población adulta en materia de comprensión lectora, matemáticas y resolución de problemas en entornos informatizados. Estas competencias son clave para la integración y participación en el mercado laboral, la educación, y la vida social y ciudadana. Además, recoge información sobre la aplicación de dichas competencias en el ámbito laboral y la vida cotidiana, así como de la correspondencia entre las habilidades adquiridas y requisitos de los puestos de trabajo.
<b>Objetivos</b>	Identificar y medir las competencias cognitivas que subyacen tanto en el éxito personal como social. Evaluar el impacto de estas competencias en los resultados sociales y económicos a nivel individual y por subgrupos de interés.

	<p>Evaluar la eficacia de los sistemas de educación y formación en la generación de competencias necesarias.</p> <p>Ayudar a clarificar los instrumentos políticos que podrían contribuir a mejorar las competencias.</p>
<b>Metodología</b>	<p>Se realiza en dos etapas:</p> <p>1ª etapa: entrevista personal asistida por ordenador. Cuestionario sobre los antecedentes educativos, laborales y familiares, además de otras cuestiones relacionadas con el uso de la lectura y las matemáticas y otras habilidades, en el contexto laboral y en la vida cotidiana.</p> <p>2ª etapa: Evaluación cognitiva</p>
<b>Cobertura</b>	<p>Primer ciclo: 39 países</p> <p>Segundo ciclo: 30 países</p>
<b>Cobertura en España</b>	<p>Ámbito geográfico: Todo el territorio nacional.</p> <p>Ámbito poblacional: población adulta entre los 16 y 65 años (ambos inclusive) que residan en el país en el momento de la recogida de datos, sin importar su ciudadanía, la nacionalidad o el idioma.</p>
<b>Fuente</b>	<p><a href="https://www.oecd.org/skills/piaac/">https://www.oecd.org/skills/piaac/</a></p>

Fuente: elaboración propia

Pese a que hemos utilizado las bases de datos anteriormente descritas, durante la investigación también hemos revisado otras encuestas y programas que guardan relación con el área de estudio, y que han sido de utilidad para descubrir otros enfoques y contribuir a nuestra gestión documental. Dichas bases de datos han sido utilizadas por otros autores y representan una oportunidad para investigaciones futuras o para replicar nuestros análisis en contextos diferentes. Por este motivo, consideramos que es conveniente citar brevemente al menos las más relevantes:

- Encuesta europea de condiciones de trabajo (*European Working Conditions Survey - EWCS*): Su objetivo es recoger datos fiables y comparables sobre las condiciones de trabajo en toda Europa. La organiza la Fundación Europea para la Mejora de las Condiciones de Vida y Trabajo (Eurofound), y en España la coordina el Instituto Nacional de Seguridad e Higiene en el Trabajo (INSHT), y hasta el momento existen siete ediciones, realizadas cada cinco años desde 1991. En la séptima edición (2021) se entrevistó a más de 70.00 trabajadores en 36 países europeos. Las entrevistas cubren aspectos de la vida laboral, como la situación del empleo, el horario de trabajo, la exposición a riesgos físicos y psicosociales, el aprendizaje y la formación, la participación, la salud y el bienestar, y el salario.
- Encuesta europea de empresas (*European Company Survey - ECS*): Su objetivo es identificar y evaluar información relativa a las políticas y prácticas de empresas europeas, así como sus repercusiones. La organiza Eurofound y se centra especialmente en los factores sociales de las empresas, como la organización del tiempo del trabajo, la conciliación, la flexibilidad, la innovación, la participación de los trabajadores, o el diálogo social en los centros de trabajo. Hasta el momento se han realizado cuatro ediciones, la última en el año 2019, en la que se incluyen los países de la UE y el Reino Unido.
- Encuesta de calidad de vida en el trabajo. Su objetivo es investigar la calidad de vida de los trabajadores. Para ello recopila información sobre las actividades del entorno de trabajo y familiar, e información sobre las percepciones de los trabajadores acerca de sus condiciones laborales, como por ejemplo la



ocupación, la movilidad, la satisfacción en el trabajo, la conciliación, la organización del trabajo, la compensación, y la formación. Esta encuesta se realizó anualmente en España desde 2011 hasta 2010, organizada por el Ministerio de Trabajo y Economía Social.

- Estudio de relaciones laborales en el lugar de trabajo (*Workplace Employment Relations Study - WERS*): Es una encuesta nacional del Reino Unido que recopila datos representativos de centros de trabajo. Se ha llevado a cabo seis veces desde 1980, y los últimos resultados son de 2011. Su principal objetivo es proporcionar un conjunto de datos fiable sobre las relaciones en el entorno laboral y su evolución a lo largo del tiempo. Recopila información sobre la organización de los centros de trabajo, la representación colectiva, las políticas de conciliación, igualdad y justicia, los mecanismos de aprendizaje y formación, y la adopción de prácticas de alta participación.

#### 2.4 Terminología específica en inglés

Tres de los cuatro artículos de esta tesis se han elaborado en inglés. Somos conscientes de que la lengua vehicular de la comunidad científica es el inglés y su uso permite a investigadores de todo el mundo compartir sus propuestas, resultados e ideas. En este sentido, alrededor del 95% de los artículos publicados durante 2020 en revistas científicas fue escrito en esta lengua (Badillo, 2021). Además, las publicaciones de mayor prestigio e impacto utilizan la lengua inglesa, y la mayor parte de los investigadores y la calidad de sus trabajos son evaluados por el factor de impacto de las revistas. Por todo ello, consideramos que es conveniente utilizar en la mayor parte de nuestros artículos el idioma universal de la comunidad científica, con el objetivo de aumentar las opciones de publicación, y así incrementar también las posibilidades de difusión de nuestra investigación. Únicamente se ha escrito en castellano el segundo artículo, debido a que se trata de un protocolo que explora una propuesta metodológica cuyo objetivo fundamental es establecer las bases de actuación del tercer artículo. Puesto que tanto el ámbito de actuación como la metodología son similares al tercer artículo, pero con una muestra más reducida, consideramos que en este caso no es tan necesario ampliar la difusión y decidimos escribirlo en castellano.

Por otro lado, y dado que el ámbito de actuación en la mayoría de los artículos es el mercado laboral español, hemos decidido crear una tabla de correspondencia terminológica para facilitar la lectura de la tesis y dar una respuesta coherente y sistemática al marco teórico general (Tabla 3). En esta tabla se muestran las definiciones de los términos frecuentemente utilizados a lo largo de la tesis. Esta tabla facilita asimismo la comprensión de los conceptos utilizados repetidamente y su significado preciso, puesto que la terminología técnica puede en ocasiones inducir a error o confusión conceptual. En general, los autores y lectores del área de investigación de gestión de recursos humanos estamos más familiarizados con la terminología inglesa. Sin embargo, es conveniente no perder la riqueza de los registros lingüísticos de una

lengua en todos sus ámbitos, también el científico, y por ello consideramos que es importante fomentar su uso en paralelo con los términos anglosajones.

Tabla 3: Correspondencia terminológica inglés - español

Human resource management (HRM)	Gestión de recursos humanos. Se desarrolla en línea con la estrategia de la organización, sus características, y los recursos disponibles. Define las políticas de RRHH, las acciones concretas y los roles de los responsables
HRM – Performance linkage	Relación entre la gestión de recursos humanos y el rendimiento
Black Box of HRM	Concepto de caja negra para indicar que se desconocen los mecanismos precisos acerca de cómo los sistemas de RRHH afectan al rendimiento. La explicación se basa en que, además de la gestión de RRHH, existen muchos factores internos y externos que afectan a las organizaciones.
HRM - Mediating variables	Algunos autores sostienen que no existe una relación directa entre la gestión de RRHH y el rendimiento de la organización, sino que hay variables mediadoras como por ejemplo las actitudes de los empleados
Human resource policy	Política de recursos humanos. Son las estrategias y dinámicas diseñadas por el departamento de RRHH de una organización para la gestión adecuada del personal. Sirven como guía de actuación a medio y largo plazo
Human resource practice (HRP)	Práctica de recursos humanos. Son iniciativas concretas de RRHH en las que se traducen las políticas previamente establecidas
High-involvement work practices (HIWP) <ul style="list-style-type: none"> <li>▪ <i>High-performance (HPWP)</i></li> <li>▪ <i>High commitment (HCWP)</i></li> </ul>	Prácticas de RRHH que proporcionan a los empleados las habilidades, motivación e información para intervenir en la toma de decisiones. En la literatura de RRHH es habitual encontrar otros términos similares como: prácticas de alto rendimiento (HPWP) o de alta participación o compromiso (HCWP), aunque existe cierta controversia al respecto
High-involvement work Systems (HIWS) <ul style="list-style-type: none"> <li>▪ <i>High-performance (HPWS)</i></li> <li>▪ <i>High commitment (HCWS)</i></li> </ul>	Conjunto o sistema de prácticas de alta implicación, diseñado para aprovechar las sinergias entre ellas y reforzar sus efectos individuales. Pueden encontrarse términos similares como sistemas de alto rendimiento o de alta participación
HRM content	Prácticas que constituyen un sistema de recursos humanos
HRM process	Se refiere a como los sistemas son implantados en la organización. Como el contenido se transmite a los empleados
HRM experienced	Se refiere a cómo perciben los empleados los sistemas.
Actual HRM vs Perceived HRM	Se refiere a la diferencia entre el concepto que tienen la organización de las políticas y prácticas que pone en marcha, y la percepción de los empleados hacia dichas propuestas
Perceived organizational support (POS) / signalling effect	Percepción de los empleados de que la organización se preocupa por su bienestar. Estas percepciones incrementan la predisposición a rendir mejor y alinear sus esfuerzos con los objetivos de la organización
HRM climate <ul style="list-style-type: none"> <li>▪ <i>Job security</i></li> <li>▪ <i>Organizational support</i></li> <li>▪ <i>Social interactions</i></li> <li>▪ <i>Psychological contract</i></li> </ul>	Percepciones del conjunto de empleados acerca de cómo es la organización, con relación a sus objetivos y valores, y de cómo se desarrollan las prácticas y políticas de RRHH al respecto. Una organización, por ejemplo, puede desarrollar un clima de eficiencia y/o un clima de bienestar. Existen diversos aspectos que influyen en las percepciones: el apoyo de la organización; las interacciones sociales; la seguridad del puesto de trabajo; o el contrato psicológico, que se refiere a las expectativas, creencias y ambiciones percibidas tanto por los empleados como por el empleador
Contingency theory	Teoría de la contingencia: sugiere que los factores contextuales afectan a la relación entre la gestión de recursos humanos y el rendimiento.
Contextual factors	Factores contextuales como, por ejemplo: el entorno socioeconómico y político; el acervo cultural del país; la cultura de la organización (valores, actitudes, misión, visión); el clima de la organización (percepciones de los empleados acerca del entorno de trabajo)

Universalist vs contingency approach	La perspectiva universal sostiene que los sistemas que han demostrado su efectividad pueden implantarse en otras organizaciones sin tener en cuenta el contexto. La perspectiva de contingencia defiende que los sistemas deben adaptarse a las circunstancias particulares de cada organización
Best fit vs best practice approach	El primer enfoque sostiene que es necesario adaptar la gestión de RRHH a las necesidades específicas de cada organización. El segundo argumenta que las prácticas de recursos humanos son independientes del contexto, y se deben utilizar las mejores
AMO Model / AMO framework	Modelo de habilidades, motivación y oportunidades
AMO bundles / dimensions	Cada una de las 3 categorías del modelo AMO (habilidades-A; motivación-M; oportunidades-O)
Ability (AMO dimension)	El modelo AMO define habilidades como las capacidades naturales o adquiridas de una persona para realizar una tarea satisfactoriamente
Knowledge, skills, abilities (KSA)	Conocimientos, competencias y habilidades de los empleados
Ability-enhancing practices <ul style="list-style-type: none"> <li>▪ <i>Training &amp; development</i></li> <li>▪ <i>Recruitment &amp; selection</i></li> <li>▪ <i>Performance evaluation</i></li> </ul>	Prácticas diseñadas para fomentar la mejora de las habilidades, asegurando que los empleados tienen los conocimientos, competencias y habilidades necesarios para realizar sus tareas de manera óptima <ul style="list-style-type: none"> <li>▪ <i>Formación y desarrollo para adquirir o mejorar habilidades</i></li> <li>▪ <i>Selección de personal adecuada para los objetivos de la organización</i></li> <li>▪ <i>Evaluación del desempeño, para introducir mejoras</i></li> </ul>
Motivation (AMO dimension)	El modelo AMO define motivación como los factores internos de una persona para iniciar y mantener un comportamiento específico.
Extrinsic vs Intrinsic motivation	Motivación extrínseca: basada en recompensas o incentivos externos, que pueden ser económicos o de otra naturaleza. Dicho de otro modo, hacer algo a cambio de una recompensa Motivación intrínseca: basada en los propios intereses o valores de cada persona. Hacer algo por voluntad propia, sin esperar nada a cambio
Motivation-enhancing practices <p>Extrinsic motivation practices</p> <ul style="list-style-type: none"> <li>▪ <i>Pay for performance</i></li> <li>▪ <i>Recognition</i></li> <li>▪ <i>Job security</i></li> <li>▪ <i>Internal promotion</i></li> <li>▪ <i>Social activities</i></li> <li>▪ <i>Work-life balance</i></li> </ul> <p>Intrinsic motivation practices</p> <ul style="list-style-type: none"> <li>▪ <i>Motivation to learn</i></li> <li>▪ <i>Personal satisfaction</i></li> <li>▪ <i>Willingness to perform</i></li> <li>▪ <i>Corporate sense</i></li> <li>▪ <i>Collaborative climate</i></li> </ul>	Prácticas diseñadas para promover la disposición positiva de los empleados a ofrecer un alto nivel de rendimiento y compromiso <ul style="list-style-type: none"> <li>▪ <i>Incentivos económicos en base al rendimiento, a nivel individual o de grupo</i></li> <li>▪ <i>Reconocimiento a las contribuciones positivas del empleado</i></li> <li>▪ <i>Confianza del empleado acerca de la estabilidad de su puesto de trabajo</i></li> <li>▪ <i>Proceso de selección en el que se cuenta con empleados de la organización</i></li> <li>▪ <i>Actividades fuera del entorno laboral para promover las interrelaciones</i></li> <li>▪ <i>Posibilidades de conciliación familiar</i></li> <li>▪ <i>Actitud de compromiso personal para aprender nuevas cosas</i></li> <li>▪ <i>Sensación de satisfacción o de realización personal en el trabajo</i></li> <li>▪ <i>Disposición mental positiva para realizar una tarea</i></li> <li>▪ <i>Sentimiento de pertenencia a una organización</i></li> <li>▪ <i>Clima de colaboración basado en la confianza y en compartir conocimiento</i></li> </ul>
Opportunity (AMO dimension)	El modelo AMO define oportunidades como las circunstancias que facilitan la realización adecuada de las tareas y la involucración de los empleados. Las oportunidades engloban diversos aspectos: implicación y descentralización en la toma de decisiones; desarrollar y compartir el conocimiento; comunicación horizontal, reduciendo la distancia entre empleados y supervisores; y enriquecimiento laboral
Opportunity-enhancing practices <p>Employee involvement</p> <ul style="list-style-type: none"> <li>▪ <i>Team working</i></li> <li>▪ <i>Involvement in the decision-making process</i></li> </ul>	Prácticas diseñadas para fomentar la participación de los empleados en la toma de decisiones, así como incrementar el sentimiento de pertenencia a la organización. <ul style="list-style-type: none"> <li>▪ <i>Trabajo en equipo</i></li> <li>▪ <i>Fomentar la involucración de los empleados en el proceso de toma de decisiones a nivel técnico u organizativo</i></li> </ul>

<ul style="list-style-type: none"> <li>▪ <i>Quality circles</i></li> <li>▪ <i>Self-directed work teams</i></li> </ul> <p>Knowledge-sharing</p> <ul style="list-style-type: none"> <li>▪ <i>Information sharing &amp; communication</i></li> <li>▪ <i>Suggestion &amp; complaint systems</i></li> <li>▪ <i>Surveys in place</i></li> </ul> <p>Job design</p> <ul style="list-style-type: none"> <li>▪ <i>Job description</i></li> <li>▪ <i>Management support</i></li> <li>▪ <i>Job rotation</i></li> <li>▪ <i>Work conditions</i></li> </ul> <p>Autonomy-enhancing</p> <ul style="list-style-type: none"> <li>▪ <i>Job autonomy</i></li> <li>▪ <i>Flexibility</i></li> </ul>	<ul style="list-style-type: none"> <li>▪ <i>Pequeños grupos que identifican analizan y resuelven problemas relacionados con la mejora de calidad de procesos o productos/ servicios</i></li> <li>▪ <i>Equipos autónomos o semiautónomos de trabajo que realizan tareas técnicas, así como de planificación y control</i></li> <li>▪ <i>Estrategias para fomentar la comunicación entre los integrantes de la empresa, y que ésta proporcione la información relevante a los empleados</i></li> <li>▪ <i>Implantación de métodos para recopilar las ideas o quejas de los empleados, como por ejemplo buzones de sugerencia</i></li> <li>▪ <i>Encuestas de opinión para recoger de forma estructurada las opiniones</i></li> <li>▪ <i>Descripción clara de las tareas, responsabilidades de un puesto de trabajo</i></li> <li>▪ <i>Comunicación efectiva entre responsables y subordinados, proporcionando la ayuda necesaria para el desarrollo en condiciones óptimas del trabajo</i></li> <li>▪ <i>Rotación del empleado entre diferentes puestos para que se familiarice con todos los aspectos de la organización e incrementar sus conocimientos</i></li> <li>▪ <i>Condiciones de trabajo físicamente seguras y adecuadas, e insertas en un clima de colaboración, confianza y respeto</i></li> <li>▪ <i>Grado de libertad de los empleados para decidir cómo realizar sus tareas</i></li> <li>▪ <i>Grado de flexibilidad para escoger el horario de trabajo, los periodos de descanso o realizar otras tareas</i></li> </ul>
<p>Control variables</p> <p>Individual level: <i>Age, gender, level of education, seniority, type of contract, managerial position</i></p> <p>Organization level: <i>company size; economic activity, country, sector, industry, competition, investment in formal HRM</i></p>	<p>Variables que se mantiene constantes o bajo control durante la ejecución de los análisis, para que su variación no invalide los resultados. Para estudiar la relación entre el modelo AMO y el rendimiento se utiliza un amplio rango de variables de control</p> <p>Variables de control a nivel individual: edad, sexo, nivel educativo, antigüedad, tipo de contrato (indefinido-temporal; a tiempo total-parcial, responsabilidades de supervisión u organización</p> <p>Variables de control a nivel organizacional: tamaño de la empresa, actividad económica, país, tipo de empresa (pública-privada), sector, competidores, inversión en RRHH</p>
<p>Performance</p>	<p>Rendimiento, entendido como el logro de los resultados de la organización</p>
<p>Outcome</p>	<p>Resultado: Algunos autores sostienen que este término refleja mejor que el término “rendimiento” el amplio rango de medidas de efectividad utilizado en el área de la gestión de recursos humanos</p>
<p>Proximal vs distal outcomes</p>	<p>Resultado cercanos y distantes. Algunos autores sostienen que las prácticas de RRHH primero afectan a los resultados individuales (cercanos) (ej. Actitudes y comportamiento de los empleados), que a su vez afectan a los resultados operacionales o financieros (distantes)</p>
<p>Macro vs micro-level outcomes</p>	<p>Los primeros se refieren a los resultados operacionales y financieros, mientras que los segundos se refieren a los resultados individuales.</p>
<p>Individual outcomes</p> <ul style="list-style-type: none"> <li>▪ <i>Employee attitudes &amp; behaviours</i></li> <li>▪ <i>Organization citizenship behaviour (OCB) / “going the extra mile”</i></li> <li>▪ <i>Employee commitment</i></li> <li>▪ <i>Employee engagement</i></li> <li>▪ <i>Job satisfaction</i></li> <li>▪ <i>Trust in management</i></li> </ul>	<p>Resultados a nivel individual</p> <ul style="list-style-type: none"> <li>▪ <i>Actitudes y comportamiento de los empleados</i></li> <li>▪ <i>Compromiso voluntario de los empleados hacia la organización que va más allá de sus obligaciones contractuales</i></li> <li>▪ <i>Compromiso del empleado hacia sus tareas asignadas</i></li> <li>▪ <i>Nivel de compromiso y de conexión de un empleado hacia la organización</i></li> <li>▪ <i>Satisfacción en el trabajo. Cómo las personas se sienten acerca de su trabajo o de aspectos de éste</i></li> <li>▪ <i>Confianza en el trato de sus superiores, lo cual genera confianza mutua</i></li> </ul>

<ul style="list-style-type: none"> <li>▪ <i>Employee loyalty</i></li> <li>▪ <i>Innovative behaviour</i></li> <li>▪ <i>Work-related stress</i></li> <li>▪ <i>Turnover intention</i></li> <li>▪ <i>Absenteeism</i></li> <li>▪ <i>Burnout</i></li> </ul>	<ul style="list-style-type: none"> <li>▪ <i>Sentido de pertenencia a la organización</i></li> <li>▪ <i>Desarrollo individual y aplicación de nuevas ideas o metodologías de trabajo para beneficiar al equipo o a la organización</i></li> <li>▪ <i>Estrés causado por la excesiva presión y demandas en el entorno laboral</i></li> <li>▪ <i>Deseo de abandonar la organización</i></li> <li>▪ <i>Abstención deliberada de acudir al trabajo a cumplir con las obligaciones</i></li> <li>▪ <i>Sentimiento de falta de energía a causa del estrés físico o emocional</i></li> </ul>
<p>Operational outcomes</p> <ul style="list-style-type: none"> <li>▪ <i>Job performance</i></li> <li>▪ <i>Manufacturing performance</i></li> <li>▪ <i>Employee / Team performance</i></li> <li>▪ <i>Productivity</i></li> <li>▪ <i>Efficiency</i></li> <li>▪ <i>Innovation</i></li> <li>▪ <i>Product / service quality</i></li> <li>▪ <i>Customer satisfaction</i></li> </ul>	<p>Resultados a nivel operacional</p> <ul style="list-style-type: none"> <li>▪ <i>Rendimiento positivo derivado de alcanzar los objetivos de un trabajo</i></li> <li>▪ <i>Rendimiento de la fabricación o de las operaciones basado en la reducción de costes, la eficiencia de los procesos o las mejoras de calidad</i></li> <li>▪ <i>La medida en la que el empleado o el equipo es capaz de cumplir los resultados esperados, sus expectativas o sus objetivos de tiempo y coste</i></li> <li>▪ <i>La relación entre la cantidad de bienes o servicios producida por un sistema productivo y los recursos utilizados para ello</i></li> <li>▪ <i>Utilizar menos recursos para lograr un objetivo, o lograr más objetivos con los mismo o menos recursos</i></li> <li>▪ <i>Creación o modificación de un producto, proceso o servicio para satisfacer a las necesidades de los potenciales usuarios</i></li> <li>▪ <i>Se define como la percepción que el cliente tiene su valor</i></li> <li>▪ <i>Medida para determinar si los productos o servicios de una compañía cumplen o exceden la satisfacción esperada de los clientes</i></li> </ul>
<p>Financial outcomes</p> <ul style="list-style-type: none"> <li>▪ <i>Market share</i></li> <li>▪ <i>Profitability</i></li> <li>▪ <i>Return of assets (ROA)</i></li> <li>▪ <i>Return on equity</i></li> <li>▪ <i>Sales growth</i></li> </ul>	<p>Resultados financieros</p> <ul style="list-style-type: none"> <li>▪ <i>Participación en el mercado. Clientes o ganancias de la empresa respecto a los clientes o ganancias potenciales del sector.</i></li> <li>▪ <i>Índice de rentabilidad que permite cuantificar el valor de la inversión</i></li> <li>▪ <i>Ratio de rentabilidad de una empresa en relación con su activo total</i></li> <li>▪ <i>Ratio que calcula el beneficio potencial que un accionista puede obtener al invertir en una empresa</i></li> <li>▪ <i>Ratio para medir la habilidad de la compañía para generar beneficios a través de las ventas en un periodo de tiempo</i></li> </ul>
<p>AMO model interactions</p> <ul style="list-style-type: none"> <li>▪ <i>Summative (additive)</i></li> <li>▪ <i>Multiplicative (interactive)</i></li> <li>▪ <i>Combinative</i></li> <li>▪ <i>Constraining factor theory</i></li> <li>▪ <i>Singly necessary and jointly sufficient theory</i></li> </ul>	<p>Modelos de interacción de las categorías del modelo AMO (A, M, O)</p> <ul style="list-style-type: none"> <li>▪ <i>Sumativo: considera que las categorías son independientes entre sí y pueden contribuir por sí solas a mejorar los resultados</i></li> <li>▪ <i>Multiplicativo: argumenta que las 3 categorías deben estar presentes en cierto grado para asegurar el rendimiento. Si una de ellas es nula, entonces lo es también el resultado.</i></li> <li>▪ <i>Enfoque híbrido: propone que hay categorías que afectan directamente a los resultados, y otras que moderan dichos efectos.</i></li> <li>▪ <i>Teoría del factor limitante: señala que el efecto aditivo de las 3 categorías está limitado por la que tiene el menor efecto.</i></li> <li>▪ <i>Sostiene que cada factor es único y necesario, y actúa como cuello de botella, no pudiendo el resto de las categorías compensar el resultado</i></li> </ul>
<p>Resource-based view model (RBV)</p>	<p>Modelo que afirma que las ventajas competitivas de una organización radican su capital humano. Por este motivo, este modelo sugiere que las políticas de recursos humanos afectan a las percepciones y rendimiento de los empleados, y éstas posteriormente a los resultados de la organización.</p>
<p>Social Exchange theory</p>	<p>Teoría que afirma que la relación entre organización y empleados es bidireccional, y puede traducirse en beneficio mutuo. Si los empleados perciben beneficios en las políticas y prácticas de la organización, decidirán compensar con el rendimiento y los comportamientos adecuados.</p>
<p>Resource-poverty perspective</p>	<p>Teoría que predice que la disponibilidad de recursos está relacionada con el tamaño de la organización, por lo que las empresas pequeñas tienen menos recursos para invertir en la gestión de recursos humanos.</p>
<p>Expectancy theory</p>	<p>Teoría que sugiere que un individuo estará motivado para rendir más si sabe que su rendimiento extra será reconocido y recompensado</p>

Social cognitive theory (SCT)	Teoría que describe la influencia de las experiencias individuales, las acciones de otros y los factores ambientales en los comportamientos individuales
Trait theory of personality	Teoría que describe los rasgos de la personalidad en base a 5 características: apertura a la experiencia (curioso-cauteloso), conciencia (organizado-descuidado), extraversión (sociable-reservado), amabilidad (amigable-insensible), y neuroticismo (susceptible – seguro)
People-performance model	Modelo que afirma que el rendimiento se basa en el rol de los responsables de implantar las políticas de RRHH y los empleados. Consiste en 4 pilares: <ol style="list-style-type: none"> <li>1. Las políticas y prácticas de RRHH deben adaptarse al contexto</li> <li>2. El rendimiento de la organización está en función de las habilidades, motivación y oportunidades de los responsables de implementar las prácticas de RRHH</li> <li>3. El estilo de liderazgo y gestión es fundamental, porque afecta a las percepciones de los empleados.</li> <li>4. Hay que medir los resultados individuales (compromiso, motivación y satisfacción), para entender la relación entre la gestión de los recursos humanos y el rendimiento.</li> </ol>

Fuente: elaboración propia

### 3. Estructura de la tesis y objetivos de investigación

#### 3.1 Estructura de la tesis

Esta tesis se ha elaborado mediante la modalidad de compendio de artículos, que permite analizar de manera individualizada todos los aspectos que construyen el objetivo principal. Cada uno de los artículos pone el foco en preguntas de investigación específicas, que requieren metodologías diversas, y cuya respuesta contribuye a crear un marco teórico global del que se alimentan los sucesivos artículos. De este modo, cada artículo representa el punto de partida sobre el que se amplía el conocimiento de manera incremental. Aunque cada uno de los artículos puede leerse independientemente –ya que tienen unos objetivos, metodología y resultados propios– es necesario que la tesis se conciba como una unidad conceptual. Por este motivo, la tesis está organizada en siete capítulos, entre los cuales se incluyen cuatro artículos de investigación, tres de ellos ya han sido publicado y el cuarto está en proceso de ser remitido a una revista en estos momentos. Se incluyen otros tres capítulos que corresponden a la introducción, la discusión general de los resultados y las conclusiones.

En la introducción se plantea el objetivo general de la tesis, la justificación y las motivaciones para su realización. Además, se describe la estructura empleada para dar respuesta a los objetivos y preguntas de investigación, y como estos objetivos se relacionan con cada uno de los artículos. Asimismo, se describen brevemente los conceptos teóricos fundamentales, como por ejemplo las prácticas de alta implicación o el modelo AMO, lo cual permite contextualizar adecuadamente la investigación. Finalmente, se describe con detalle la metodología empleada, que en este caso varía en función de cada uno de los artículos planteados.

El primer artículo (Capítulo 2) es una revisión sistemática de literatura que tiene por título *“Deconstructing AMO framework: a systematic review”*. El artículo ha sido

aceptado y publicado por la revista *Intangible Capital*; Vol.12, NO.4 (2016); 1040-1087; Online ISSN: 1697-9818; Print ISSN: 2014-3214. El modelo AMO es el eje vertebrador de la tesis. Este modelo ha sido ampliamente aceptado desde su aparición en la literatura de gestión de recursos humanos para explicar la relación entre las prácticas de alta implicación y el rendimiento. Por ello, consideramos que es conveniente comenzar la tesis con un artículo que gire en torno al modelo. Por un lado, esta revisión es el punto de partida de la tesis y establece un marco teórico inicial que está relacionado con el resto de los artículos que la componen. Por otro lado, la revisión proporciona información sobre la propuesta metodológica del modelo y sus consideraciones teóricas; los orígenes del modelo, su propuesta original y las consideraciones posteriores de otros autores; los estudios y las propuestas prácticas llevadas a cabo relacionadas con el modelo para comprobar su validez; otros modelos que pueden complementar o sustituir el modelo AMO; de las prácticas de alta implicación utilizadas para analizar el modelo; de cómo se ha medido su efectividad y las diferentes consideraciones del término rendimiento en la literatura de gestión de recursos humanos; y de cómo interactúan las diferentes dimensiones del modelo entre sí y cuál es su relación con el rendimiento en las organizaciones. Finalmente, realizar una revisión sistemática de literatura con un protocolo transparente nos permite la posibilidad de replicarla en futuros estudios para determinar cómo han evolucionado las preguntas de investigación planteadas al cabo de unos años.

El segundo y tercer artículo (capítulos 3 y 4) están estrechamente relacionados, ya que conforman una publicación en dos fases en la que se investiga la incidencia y el grado de uso de las prácticas de recursos humanos relacionadas con la motivación extrínseca en España, denominados habitualmente programas de remuneración. Las prácticas relacionadas con la motivación constituyen uno de los tres grandes bloques del modelo AMO, y nuestro objetivo es analizar de manera individualizada esta dimensión para observar qué factores podrían influir en su adopción en el contexto laboral español, a fin de determinar si la prevalencia de estas prácticas es suficiente para ser tomada en cuenta en los modelos de investigación. Ambos artículos han sido aceptados y publicados en la revista *Working Papers on Operations Management (WPOM)*. El primero de ellos se titula "*Protocolo ¿De qué depende el grado de uso de los complementos salariales? Evidencias a partir de la encuesta de sueldos y salarios INE (estudio piloto con datos de 2006)*"; Vol.10, NO.1 (2019); 70-103; ISSN: 1989-9068. En este protocolo se describe con detalle una guía paso a paso para determinar la incidencia de los programas de remuneración en España a través de los datos de la Encuesta de Estructura Salarial (EES) realizada cada cuatro años por el Instituto Nacional de Estadística de España (INE). El segundo documento de la publicación en dos fases es el artículo definitivo y tiene por título: "*What does the wage structure depend on? Evidence from the national salary survey in Spain*"; Vol.1, NO.1 (2022); 35-63; ISSN: 1989-9068. En este artículo se desarrolla y amplía la metodología propuesta en el protocolo anterior para analizar las últimas tres series de datos disponibles de la EES en el momento de la elaboración del artículo (2006, 2010, 2014). Para ello, se determinan en primer lugar las preguntas de investigación: ¿cuál es el grado de uso y la intensidad de los programas de remuneración

en España?; ¿es la baja incidencia de estos programas en la serie del 2006 la causa de que no se desagreguen los datos en las series siguientes?; ¿qué factores determinan la puesta en marcha de los programas de remuneración?; ¿afectan los ciclos económicos a su implantación? A partir de estas preguntas de investigación se desarrolla un marco conceptual en el que se revisan las publicaciones anteriores sobre el tema. Posteriormente, se define la metodología utilizada para responder a las cuestiones planteadas y se realizan los análisis estadísticos pertinentes, que incluyen un modelo lineal generalizado (GLM), para determinar los resultados y establecer las conclusiones. En el punto 3.2 de esta tesis se explica con detalle el proceso de publicación en dos fases.

El cuarto artículo (capítulo 5) se titula *“Comparing predictive validity of summative and multiplicative AMO models to explain attitudinal outcomes (job satisfaction)”*. En el momento del depósito de la tesis, está en proceso de adaptación para enviar a la revista *European Journal of Management and Business Economics*. Una de las cuestiones que más interés suscitan acerca del modelo AMO, y que constituye uno de los principales objetivos de nuestra tesis, es determinar cómo interactúan las categorías de prácticas entre sí para mejorar los resultados. Por este motivo, en este último artículo estudiamos cuál de los modelos de interrelación de las variables AMO predice mejor los resultados a nivel individual relacionados con las actitudes de los empleados, en este caso la satisfacción en el trabajo. Hemos escogido como medida de resultados la satisfacción en el trabajo, porque hay estudios que sostienen que las prácticas de alta implicación influyen en primer lugar a las actitudes de los empleados, y éstas posteriormente pueden afectar positivamente a los resultados operacionales como la productividad, así como al rendimiento financiero. Para realizar el estudio, hemos utilizado los datos de España del Programa de Evaluación de Competencias de Adultos (PIAAC), que proporciona información relacionada con las prácticas de recursos humanos, y mide la satisfacción en el trabajo de los encuestados, por lo que permite diseñar el modelo AMO y realizar los análisis estadísticos pertinentes. Estos datos corresponden a la única serie disponible hasta el momento, con la ventaja de que podremos replicar la investigación con las futuras series o con otros países para establecer comparaciones. En este artículo realizamos en primer lugar una revisión de literatura, con el objetivo de determinar qué prácticas de recursos humanos podemos incluir en cada una de las categorías del modelo AMO, y qué modelos de interacción entre ellas se han propuesto anteriormente en otros estudios. A continuación, definimos las variables la metodología adecuada, en la que se utiliza la regresión de mínimos cuadrados parciales (PLS), para comparar los modelos descritos y determinar finalmente los resultados y conclusiones pertinentes.

En los dos últimos capítulos se integran la discusión general de los resultados y las conclusiones extraídas a lo largo de la investigación, explicando las relaciones entre los objetivos y las preguntas de investigación iniciales y los resultados obtenidos, así como las implicaciones que tienen estas relaciones con los objetivos globales de la tesis y con el campo de investigación. El objetivo es crear una visión global tanto de los resultados como del proceso seguido. En el capítulo de conclusiones, además, se explican las aportaciones principales de la investigación y se establecen las posibles líneas de investigación futura.



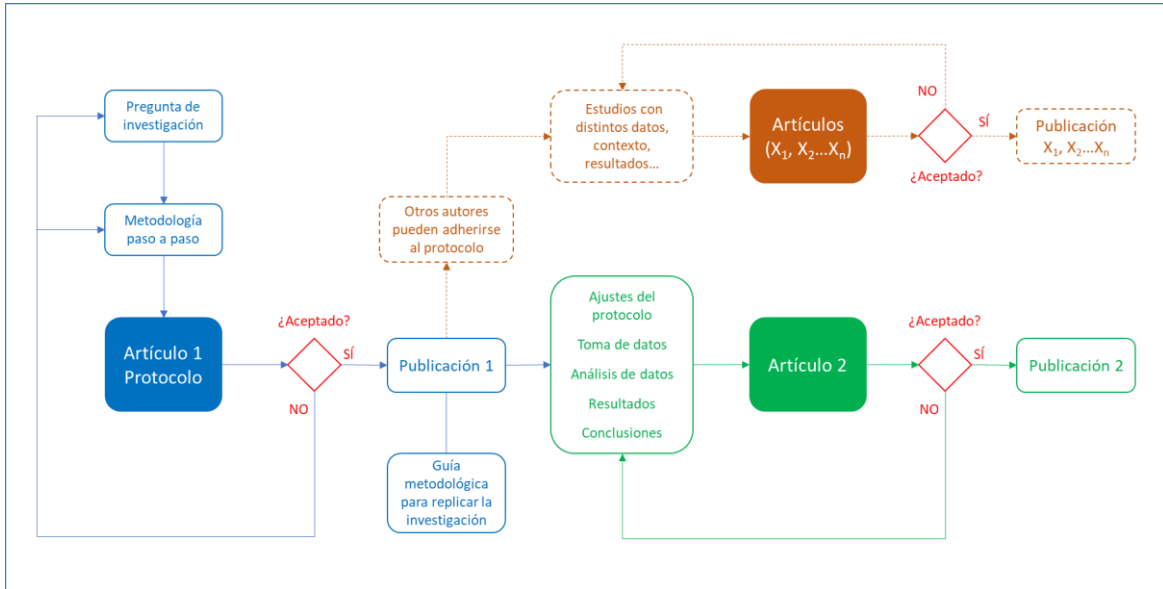
### 3.2 Publicación en dos fases

En un entorno científico es esencial que los trabajos puedan replicarse, tanto para que otros autores comprueben la validez del modelo planteado y puedan establecer conclusiones sólidas, como para comparar con muestras diferentes si los resultados y las conclusiones extraídas se pueden generalizar. La ausencia de estudios que repliquen modelos e investigaciones propuestas por otros autores constituye una importante carencia en el área de las ciencias sociales relacionada con la gestión empresarial, quizás provocada por la exigencia de las revistas científicas de publicar novedades relevantes. En nuestra opinión, la propia idiosincrasia del conocimiento científico obliga a construir el conocimiento de manera gradual y segura, contrastando en diferentes ámbitos los resultados y conclusiones obtenidas por otros autores.

La publicación en dos fases, también denominada publicación inversa, tiene como principal objetivo ofrecer un enfoque metodológico transparente y fácilmente replicable que permita además valorar, previamente a la publicación principal, si la investigación y sus contribuciones son pertinentes. La publicación en dos fases incluye dos contribuciones científicas: un artículo en formato protocolo y un segundo artículo con un enfoque convencional donde con los datos definitivos, y siguiendo los pasos establecidos en el protocolo, se presentan y discuten los resultados. Dicho de otro modo, la publicación en dos fases intenta asegurar el interés y la viabilidad de un artículo antes incluso de comenzar a escribirlo, y permite al autor centrarse en los objetivos previamente establecidos.

El protocolo ofrece fundamentalmente una contribución metodológica, ya que describe con detalle, paso a paso, el proceso a seguir para resolver una o varias preguntas de investigación. Es decir, sirve como modelo para la investigación posterior y permite a otros autores adherirse a él para replicarlo o testear su validez con una muestra diferente a la propuesta. El artículo en formato protocolo es una contribución científica en sí misma, puesto que justifica un hueco de investigación, y justifica si la pregunta de investigación planteada es relevante en el área de estudio. Como tal, el protocolo se revisa con los criterios de calidad establecidos por cada revista. En este sentido, los revisores valoran la pertinencia de la pregunta de investigación, así como la metodología propuesta. El protocolo expone de manera explícita el objetivo perseguido a través de las preguntas de investigación, las contribuciones que se pretende aportar a profesionales e investigadores, los antecedentes de la investigación que se concretan en la definición de las variables incluidas en el modelo, la revisión de las publicaciones anteriores sobre el tema para conocer cómo se relacionan las variables en otros análisis, la definición de la población objetivo y cómo se selecciona para que los resultados sean generalizables, y los métodos de análisis necesarios para obtener los resultados. Adicionalmente, el protocolo puede presentar un análisis piloto con una muestra reducida para tantear la viabilidad y realizar los ajustes pertinentes. Finalmente, es habitual incluir un plan de trabajo que determine el marco temporal de actuación. El siguiente gráfico muestra principales pasos de una publicación en dos fases.

Gráfico 4: Publicación en dos fases

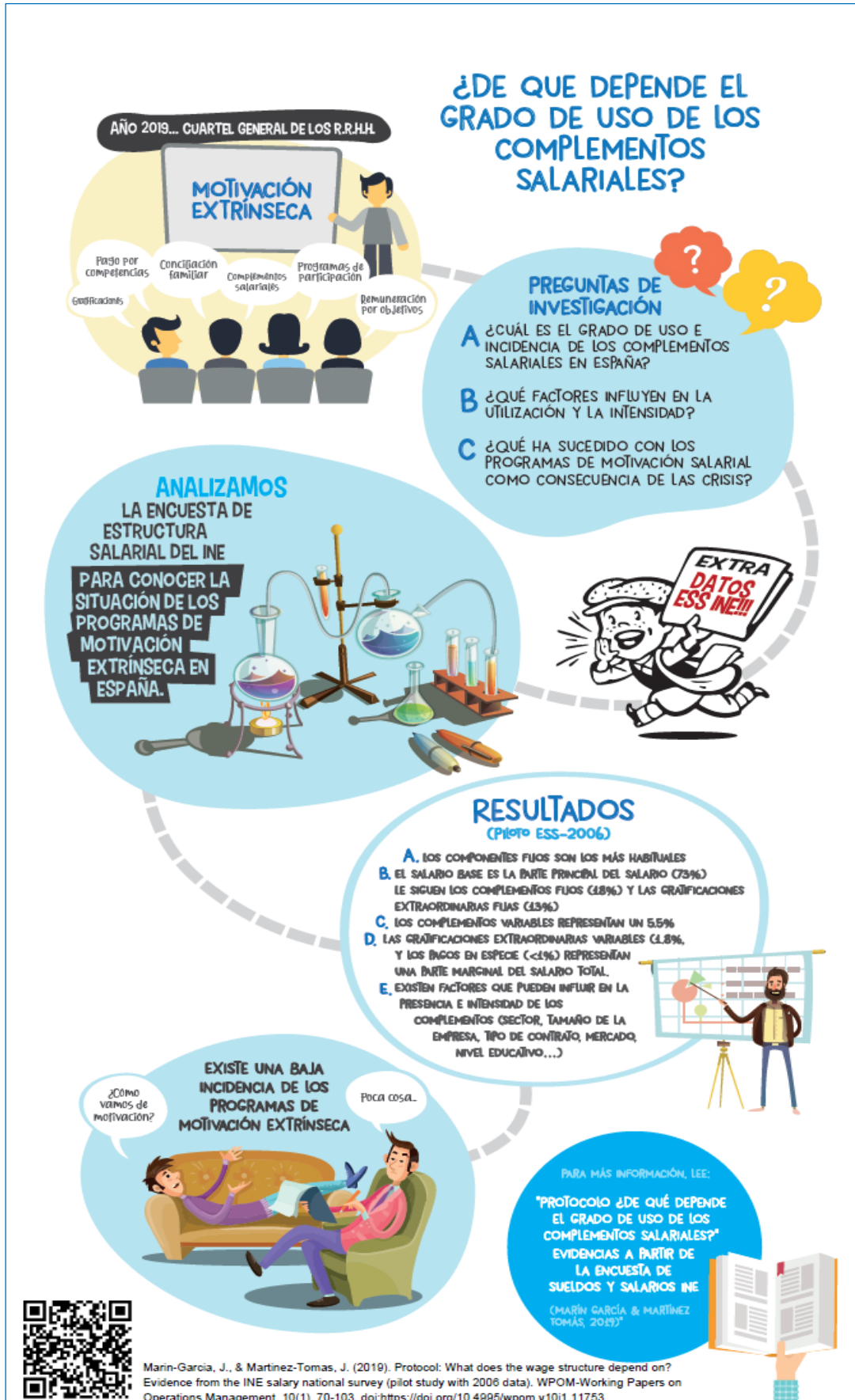


Fuente: elaboración propia

EL segundo y tercer artículo de esta tesis conforman una publicación en dos fases. El primero de ellos es el protocolo y el segundo el artículo con los análisis definitivos. El protocolo está dividido en diferentes secciones. En primer lugar, se presenta un marco conceptual donde se analiza el concepto de motivación, las diferencias entre motivación intrínseca y extrínseca, y las prácticas de recursos humanos relacionadas con ambas categorías. Asimismo, se establece la relación entre diferentes variables que contempla la EES y los programas de participación económica, como por ejemplo las formas de remuneración basadas en el desempeño individual o colectivo. A continuación, se definen las preguntas de investigación planteadas y se explica la contribución que esperamos ofrecer. En este caso, consideramos que es interesante conocer qué programas de remuneración se utilizan, si la incidencia de dichos programas es relevante en España o si está por ejemplo condicionada por la rigidez de la legislación laboral española, si hay factores organizacionales o individuales que influyen en la implantación de estos programas, y cómo evoluciona su uso en función de la situación económica. La sección de metodología se aborda desde dos perspectivas diferentes, aunque siempre describiendo con detalle el proceso para que pueda replicarse paso a paso en futuras investigaciones. Por un lado, se lleva a cabo una revisión sistemática de literatura, siguiendo el mismo proceso a la ya descrita anteriormente para el primer artículo. Por otro lado, se describe el análisis estadístico de los datos de la encuesta salarial, explicando la población objeto de estudio, las variables seleccionadas, los cálculos previos efectuados para los posteriores análisis estadísticos y la sintaxis utilizada para realizar dichos análisis, en este caso del software IBM SPSS Statistics. El protocolo incluye una prueba piloto de una de las series de la EES (2006), que nos sirve para comprobar la validez de la metodología descrita y para extraer las conclusiones previas al posterior análisis del resto de series en el siguiente artículo. Finalmente, el protocolo incluye un plan de trabajo para su ejecución en los plazos previstos. Con posterioridad a la

aceptación y publicación del protocolo, se elabora el artículo definitivo, cuyo objetivo es dar respuesta a las preguntas de investigación planteadas, aunque esta vez utilizando tres series de datos de la EES, en lugar de una, como en la prueba piloto del protocolo. En el artículo definitivo se utiliza la metodología establecida y probada en el protocolo, introduciendo las mejoras pertinentes para obtener un producto de mayor calidad.

Es conveniente indicar que, tras la elaboración y publicación del protocolo, se presentaron los resultados obtenidos en dos congresos, con el objetivo de comprobar si la investigación suscitaba interés, como paso previo a la realización del artículo definitivo. Concretamente, el trabajo se presentó en el XXIX congreso de ACEDE (16-18 junio 2019, A Coruña), y en II Congreso Iberoamericano de Jóvenes Investigadores en Ciencias Económicas y Dirección de Empresas (AJICEDE; 29-29 noviembre 2019; Valencia), aunque para este último se añadieron los análisis previos realizados con el resto de las series disponibles de la EES. Consideramos que fue muy positivo debatir con la comunidad académica la relevancia y posibles implicaciones de nuestro estudio, así como comprobar si las preguntas de investigación planteadas eran pertinentes. Como complemento a las comunicaciones de dichos congresos, se realizó también una presentación en formato poster para aumentar la difusión, especialmente en redes sociales. Para conseguir una difusión amplia y promover su lectura también entre lectores ajenos al entorno académico, se optó por la modalidad de “cartoon abstract”. Esta modalidad de presentación ofrece un resumen conciso de la investigación en un formato accesible, muy visual y atractivo, y tiene como objetivo suscitar el interés del lector hacia la investigación. La ilustración 1 muestra este documento.



Marin-García, J., & Martínez-Tomás, J. (2019). Protocol: What does the wage structure depend on? Evidence from the INE salary national survey (pilot study with 2006 data). WPOM-Working Papers on Operations Management, 10(1), 70-103. doi:https://doi.org/10.4995/wpom.v10i1.11753

Fuente: elaboración propia

### 3.3 Plan de trabajo. Objetivos de investigación

La tesis se ha articulado a través de unos objetivos específicos, y siguiendo un plan de investigación previamente trazado. La metodología que utilizamos en la investigación determina el cómo lo vamos a hacer. Sin embargo, es fundamental también fijar el cuándo. De este modo, el primer objetivo que planteamos es un objetivo de planificación, que se traduce en un plan de trabajo de cinco años, teniendo en cuenta que la tesis se realiza a tiempo parcial por motivos laborales. La siguiente tabla (Tabla 4) ilustra el plan de trabajo planteado al inicio de la investigación.

Tabla 4: Plan de trabajo de la tesis

Periodo	Categoría	Tarea
Año 1	Planificación	<ul style="list-style-type: none"> <li>▪ Definir el ámbito de la investigación. Plan de investigación</li> <li>▪ Planificación de recursos económicos, materiales y temporales</li> <li>▪ Plan de ejecución anual de la tesis (5 años)</li> <li>▪ Calendario de reuniones con el director de la tesis</li> <li>▪ Informe anual actividad investigadora</li> </ul>
	Fuentes de información	<ul style="list-style-type: none"> <li>▪ Revisión de literatura. Búsqueda y clasificación de las referencias bibliográficas relacionadas con el modelo AMO y sus investigaciones previas en el área de RRHH.</li> <li>▪ Selección y utilización de un software de gestión de referencias</li> <li>▪ Lectura de los artículos seleccionados para extraer información acerca relevante para el estudio</li> </ul>
	Formación	<ul style="list-style-type: none"> <li>▪ Realización de cursos de formación transversal (80h)</li> </ul>
	Difusión	<ul style="list-style-type: none"> <li>▪ Art. 1. AMO – Revisión sistemática. Publicación y difusión</li> <li>▪ Art2. INE – EES (Protocolo): definir objetivos, preguntas de investigación y metodología</li> <li>▪ Art2. INE – EES (Protocolo): Localizar fuentes de información</li> <li>▪ Art2. INE – EES (Protocolo): Elaborar protocolo de búsqueda</li> </ul>
Año 2	Planificación	<ul style="list-style-type: none"> <li>▪ Art.2 y Art.3 - tabla por artículos para organizar la información</li> <li>▪ Organizar información en software de gestión de referencias</li> <li>▪ Planificar publicación en 2 fases (Art.2 y Art.3)</li> <li>▪ Calendario de reuniones con el director de la tesis</li> <li>▪ Informe anual actividad investigadora</li> </ul>
	Fuentes de información	<ul style="list-style-type: none"> <li>▪ Revisión de literatura. Búsqueda de información en bases de datos especializadas: los tipos de motivación; la estructura salarial en España; el grado de uso e incidencia de los programas de remuneración económicos; factores que pueden influir en la implantación de los programas</li> <li>▪ Lectura de los artículos seleccionados</li> </ul>
	Formación	<ul style="list-style-type: none"> <li>▪ Realización de cursos de formación transversal (40h)</li> <li>▪ Realización de cursos de interés (20h). Formación específica relacionada con la gestión de recursos humanos</li> </ul>
	Difusión	<ul style="list-style-type: none"> <li>▪ Art2. INE – EES (Protocolo): Elaboración del protocolo y prueba piloto de la serie 2006</li> <li>▪ Art2. INE – EES (Protocolo): Proceso de publicación. Seleccionar revistas potenciales. Realizar cambios sugeridos</li> <li>▪ Presentación en congreso de los resultados</li> </ul>
Año 3	Planificación	<ul style="list-style-type: none"> <li>▪ Calendario de reuniones con el director de la tesis</li> <li>▪ Planificación de actividades anuales. Revisión del estado de los artículos y de la tesis tras la primera mitad</li> <li>▪ Informe anual actividad investigadora</li> </ul>

	Fuentes de información	<ul style="list-style-type: none"> <li>▪ Revisión de literatura. Tipología de interacción de modelos AMO en estudios previos (sumativo, multiplicativo, otros)</li> <li>▪ Análisis de encuestas nacionales o europeas. Revisión de cuestionarios y variables propuestas</li> <li>▪ Lectura de los artículos seleccionados</li> </ul>
	Formación	<ul style="list-style-type: none"> <li>▪ Realización de cursos de formación transversal (40h)</li> </ul>
	Difusión	<ul style="list-style-type: none"> <li>▪ Art3. INE – EES (2006-2014): definir objetivos, preguntas de investigación y metodología</li> <li>▪ Art3. INE – EES (2006-2014): Presentación en congreso</li> <li>▪ Art.4: PIAAC (sumativo vs multiplicativo): definir objetivos, preguntas de investigación y metodología</li> </ul>
Año 4	Planificación	<ul style="list-style-type: none"> <li>▪ Calendario de reuniones con el director de la tesis</li> <li>▪ Organización temporal para finalizar y publicar Art.3 y Art.4</li> <li>▪ Art.4 - tabla por artículos para organizar la información</li> <li>▪ Informe anual actividad investigadora</li> </ul>
	Fuentes de información	<ul style="list-style-type: none"> <li>▪ Art.4: PIAAC (sumativo vs multiplicativo): revisión sistemática de literatura. Modelos de interacción AMO; satisfacción en el trabajo; rendimiento</li> <li>▪ Lectura de los artículos seleccionados</li> </ul>
	Formación	<ul style="list-style-type: none"> <li>▪ Realización de cursos de interés (20h). Formación específica relacionada con la gestión de recursos humanos</li> </ul>
	Difusión	<ul style="list-style-type: none"> <li>▪ Art3. INE – EES (2006-2014): Elaboración del artículo</li> <li>▪ Art3. INE – EES (2006-2014): Proceso de publicación. Seleccionar revistas potenciales. Realizar cambios sugeridos en el proceso de revisión</li> </ul>
Año 5	Planificación	<ul style="list-style-type: none"> <li>▪ Calendario de reuniones con el director de la tesis</li> <li>▪ Art4. PIAAC-Mult-sum: Planificación de la publicación</li> <li>▪ Planificación de la elaboración del documento final de la tesis</li> <li>▪ Informe anual actividad investigadora</li> </ul>
	Fuentes de información	<ul style="list-style-type: none"> <li>▪ Búsqueda de información relativa a la redacción y publicación de tesis por compendio de artículos</li> <li>▪ Actualización del protocolo de revisión sistemática planteado al inicio de la tesis para observar cómo ha evolucionado durante el periodo de la tesis</li> </ul>
	Difusión	<ul style="list-style-type: none"> <li>▪ Art4. PIAAC-Mult-sum: Elaboración del artículo</li> <li>▪ Art4. PIAAC-Mult-sum: Proceso de publicación.</li> <li>▪ Depósito de la tesis. Elaboración de la presentación</li> </ul>

Fuente: elaboración propia

Como hemos dicho anteriormente, el objetivo principal de la tesis es determinar la relación que existe entre las prácticas de alta implicación y el rendimiento en las organizaciones. Se trata de un objetivo general en el que influyen diversos factores. Por este motivo, hemos estructurado la tesis a través del planteamiento de diversas preguntas de investigación u objetivos secundarios. En cada uno de los artículos que conforman la tesis se analizan una o varias de las preguntas de investigación planteadas, con el fin de construir gradualmente el conocimiento científico que nos permita dar respuesta a cada una de ellas, y contribuir al objetivo general planteado inicialmente. En la siguiente tabla (Tabla 5) se presenta la relación entre los objetivos secundarios y el artículo en el cual se estudian de manera pormenorizada cada uno de ellos.

Tabla 5: Atribución de objetivos en cada artículo elaborado

Objetivo	Artículo
Determinar los orígenes del modelo AMO y su planteamiento inicial	Art.1 - Deconstructing AMO framework: a systematic review
Recopilar resultados y conclusiones de estudios previos en relación con el modelo AMO	Art.1 - Deconstructing AMO framework: a systematic review Art.2 - Protocolo ¿De qué depende el grado de uso de los complementos... Art.3 - "What does the wage structure depend on?..." Art.4 - Comparing predictive validity of summative and multiplicative AMO
Determinar qué prácticas de alta implicación incluyen las tres categorías propuestas por el modelo AMO	Art.1 - Deconstructing AMO framework: a systematic review Art.4 - Comparing predictive validity of summative and multiplicative AMO...
Identificar distintas medidas de rendimiento utilizadas para determinar la validez del modelo	Art.1 - Deconstructing AMO framework: a systematic review Art.4 - Comparing predictive validity of summative and multiplicative AMO
Evaluar los factores que afectan a la utilización y el rendimiento de los sistemas de alta implicación	Art.3 - "What does the wage structure depend on?..." Art.4 - Comparing predictive validity of summative and multiplicative AMO
Identificar modelos de interacción de las categorías del modelo AMO (sumativo; multiplicativo; otros)	Art.1 - Deconstructing AMO framework: a systematic review Art.4 - Comparing predictive validity of summative and multiplicative AMO...
Evaluar el grado de utilización de prácticas de alta implicación en el marco laboral español	Art.2 - Protocolo ¿De qué depende el grado de uso de los complementos... Art.3 - "What does the wage structure depend on?..." Art.4 - Comparing predictive validity of summative and multiplicative AMO
Comprobar la validez del modelo AMO. Especificar el modelo AMO como multiplicativo o sumativo	Art.4 - Comparing predictive validity of summative and multiplicative AMO

Fuente: elaboración propia

#### 4. Metodología

A lo largo de la tesis se han empleado distintas estrategias metodológicas en función de las necesidades y los objetivos específicos de cada uno de los artículos. La tabla 6 resume las metodologías empleadas por artículo, que se describen a continuación. La investigación tiene una importante base documental, puesto que se apoya en diversas fuentes de información destinadas a conocer el estado actual de las cuestiones planteadas. A través de bases de datos especializadas y relacionadas con el ámbito de la investigación, hemos localizado y recopilado la bibliografía pertinente. No hemos enfocado la búsqueda bibliográfica como una acción estática y puntual destinada a

marcar el punto de partida de la tesis, sino que la hemos tratado como una actividad dinámica que forma parte del plan de trabajo anual a lo largo de todo el desarrollo de la tesis. De este modo, en el momento de finalización de la tesis, contamos con una base de datos extensa y actualizada que nos permite observar cómo han evolucionado los estudios en estos cinco últimos años.

Tabla 6: Metodología por artículo elaborado

Metodología	Artículo
Revisión sistemática de literatura	Art.1 - Deconstructing AMO framework: a systematic review Art.4 - Comparing predictive validity of summative and multiplicative AMO...
Análisis estadístico multivariante (GLM, PLS-SEM)	Art.2 - Protocolo ¿De qué depende el grado de uso de los complementos... Art.3 - "What does the wage structure depend on?... Art.4 - Comparing predictive validity of summative and multiplicative AMO

Fuente: elaboración propia

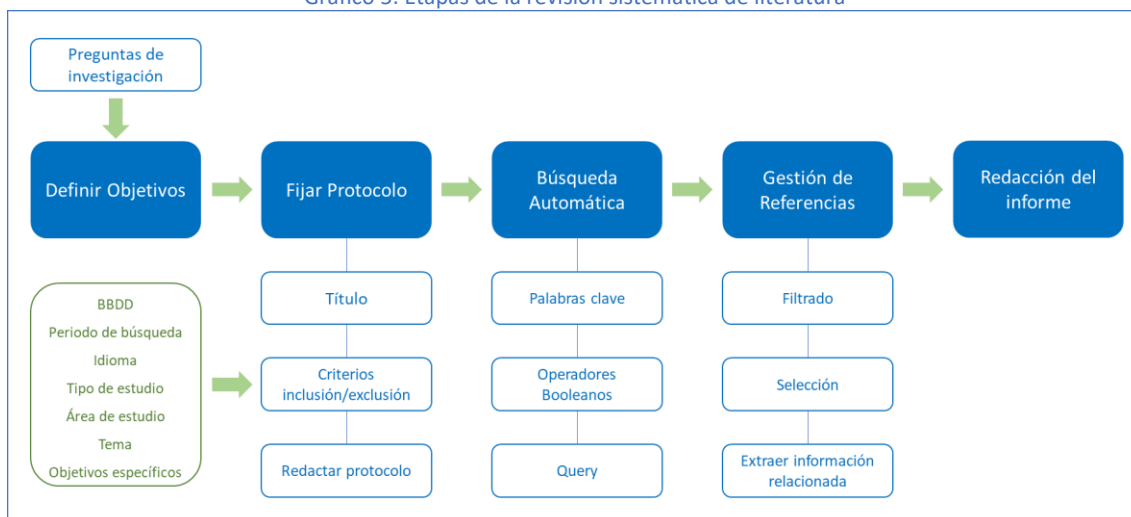
#### 4.1 Revisión sistemática de literatura

La revisión de literatura es un análisis de lo que ha sido publicado anteriormente sobre un tema por académicos e investigadores acreditados. Aunque la revisión de literatura es en ocasiones el propio producto final y como tal se publica, muchas veces representa el primer paso de una investigación o un artículo científico. Llevar a cabo una revisión adecuada es fundamental por diversos motivos. En primer lugar, es necesario conocer lo que ya se sabe del ámbito de estudio, para construir el conocimiento sobre una base comprobada. Asimismo, permite aprender sobre los éxitos o fracasos de anteriores investigaciones, así como sobre los diferentes enfoques teóricos o metodológicos previamente utilizados. Por otra parte, puede sugerir nuevas preguntas de investigación o la inclusión de nuevas variables en los análisis. Finalmente, es importante para interpretar y discutir los resultados de una investigación en base a lo que otros han considerado con anterioridad.

Una revisión de literatura es sistemática cuando utiliza procedimientos transparentes para buscar, evaluar y sintetizar los resultados de un estudio. El objetivo de la revisión sistemática de literatura es sintetizar los resultados y conclusiones de diversos estudios para ofrecer un resumen de los conocimientos más relevantes sobre un tema específico. Por este motivo, los estudios incluidos en este tipo de revisión deben extraerse de bases de datos de calidad contrastada. La revisión sistemática incluye un protocolo donde se detalla el plan de acción, las preguntas de investigación, los criterios de inclusión y exclusión de artículos, la estrategia de búsqueda y la codificación de los artículos incluidos. El plan de acción contiene la información necesaria para alcanzar los objetivos e identifica las etapas y los recursos necesarios. El siguiente gráfico (gráfico 5) muestra principales pasos de una revisión sistemática de literatura.



Gráfico 5: Etapas de la revisión sistemática de literatura



Fuente: elaboración propia

La revisión sistemática de literatura se ha empleado en todos los artículos de la tesis para realizar búsquedas de información coherentes y estructuradas que nos permitan adquirir los conocimientos previos relacionados con los objetivos de cada estudio. Sin embargo, el primer artículo se articula completamente en torno a esta metodología, que además supone el producto final del estudio. Por este motivo, y pese a que el protocolo de revisión sistemática de literatura del primer artículo está descrito con detalle en la sección de metodología del propio artículo, consideremos que es interesante resaltar las principales fases para ilustrar el proceso con un caso práctico.

En primer lugar, nos planteamos la pertinencia de la revisión. A este respecto, consideramos que es fundamental preguntarse por qué es importante hacer una revisión, cuáles son nuestros objetivos y qué esperamos conseguir. Todas estas cuestiones permiten a identificar las preguntas de investigación que debemos responder y que nos permiten seleccionar los términos de búsqueda adecuados. En el caso del primer artículo, las preguntas a las que queríamos dar respuesta eran las siguientes:

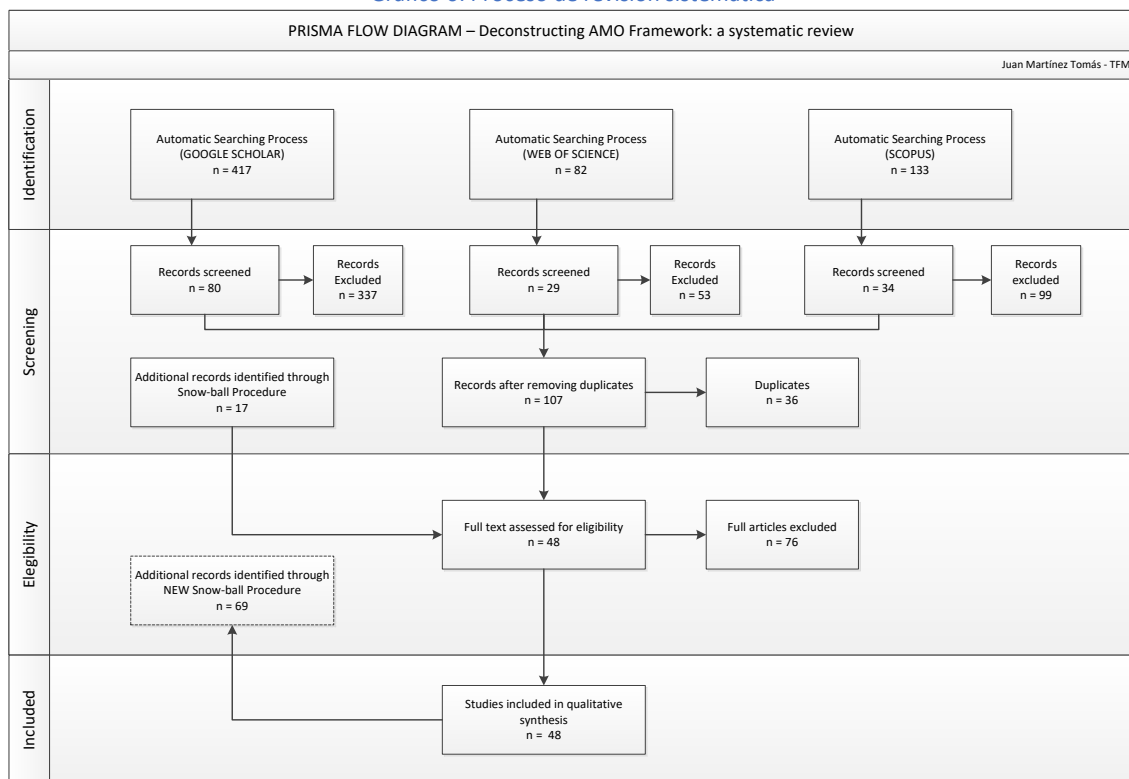
- ¿Qué es el modelo AMO? ¿Cuándo fue propuesto por vez primera?
- ¿Qué otros modelos relacionados con la gestión de recursos humanos complementan o sustituyen al modelo AMO?
- ¿Qué investigaciones se han llevado a cabo para validar el modelo?
- ¿Qué prácticas de alta implicación se han utilizado para analizar el modelo?
- ¿Cómo se ha medido la efectividad del modelo a lo largo de la literatura?
- ¿El modelo AMO es sumativo o multiplicativo?

A continuación, establecemos los criterios de inclusión y de exclusión de los artículos que se extraen de la búsqueda bibliográfica. Nuestro primer criterio de inclusión hace relación a la idoneidad de las fuentes de información, ya que se aceptan artículos o revisiones científicas indexadas en las bases de datos Scopus, Web of Science y Google Scholar. Esta última se selecciona porque dispone de una cobertura más amplia, aunque no siempre los resultados obtenidos son tan relevantes como en las dos

primeras. El segundo criterio de inclusión está relacionado con el periodo de búsqueda. En esta revisión se aceptan artículos de las áreas de ciencias sociales o recursos humanos, publicados desde el año 1993, fecha en la que es nombrado por primera vez el modelo por Thomas Bailey, hasta el momento de llevar a cabo la búsqueda automática. El tercer criterio es idiomático: artículos escritos en español o inglés. El cuarto criterio es aceptar investigaciones cuyo objetivo específico sea validar el modelo AMO. Como a priori pensamos que no habrá una gran cantidad, incluimos el último criterio de inclusión, que es incluir investigaciones que utilicen de manera directa o indirecta el modelo AMO en sus análisis para estudiar la relación entre prácticas de recursos humanos destinadas a incrementar las habilidades, motivación y oportunidades de los empleados, y el rendimiento. Con respecto a los criterios de exclusión, no aceptamos para la posterior revisión artículos no relacionados con la gestión de recursos humanos. Del mismo modo, no se aceptan Investigaciones que no apliquen de manera práctica el modelo AMO en sus análisis, aunque lo mencionen en el marco teórico. Finalmente, no se aceptan investigaciones relacionadas con el modelo AMO para explicar patrones de consumo, psicología o comportamiento del consumidor, o estrategias de publicidad o marketing.

El siguiente paso es establecer el protocolo de búsqueda, que nosotros hemos estructurado en cuatro etapas: identificación, revisión, elección e inclusión. El gráfico 6 muestra el proceso completo del protocolo de revisión sistemática.

Gráfico 6: Proceso de revisión sistemática



Fuente: elaboración propia

En la etapa de identificación seleccionamos los términos de búsqueda y los operadores booleanos. En los buscadores de Scopus y Web of Science utilizamos los mismos

términos de búsqueda. En Google Scholar refinamos la búsqueda para obtener resultados más precisos, dado que es una base de datos que proporciona un gran volumen de referencias con los términos utilizados previamente.

En la etapa de revisión se filtran los artículos manualmente, utilizando un método sistemático. En primer lugar, se ordenan los artículos por relevancia. Posteriormente se revisan el título y el resumen, excluyendo aquellos artículos que inequívocamente no están relacionados con las preguntas de investigación, y seleccionando los que sí cumplen los criterios de inclusión previamente definidos. Estos últimos se almacenan en un software de gestión bibliográfica para su posterior revisión. Finalmente, se recopilan los textos completos de los artículos seleccionados en esta etapa y se eliminan los duplicados, puesto que utilizamos tres fuentes distintas de información.

En la fase de elección procedemos a filtrar los documentos seleccionados en la fase anterior. En primer lugar, se ordenan por orden alfabético, para minimizar sesgos de relevancia o año de publicación. Posteriormente se codifican con la rúbrica mostrada en la tabla 7. Todas las referencias codificadas como aprobadas o cuestionables son incluidas para la siguiente etapa.

Tabla 7: Rúbrica para codificar los artículos (Fase de elección)

Código	Definición	Cuando utilizar	Acción
A. Aprobado	El título y el resumen están claramente relacionados con los objetivos de la investigación.	Cuando el artículo es acorde a los criterios de inclusión y no afecta a los criterios de exclusión.	Incluir el artículo en la lista de referencias
R. Rechazado	El título y el resumen no tienen relación con los objetivos del estudio.	Cuando el artículo es acorde a los criterios de exclusión.	Excluir la referencia.
Q. Cuestionable	El artículo y el resumen no están claramente relacionados con los objetivos del estudio.	Cuando no hay evidencia clara de que el resumen sea acorde con los criterios de inclusión, pero parece estar relacionado con ellos.	Analizar el texto completo para determinar si esta referencia debe ser incluida en el estudio.
I. Interesante	El artículo y el resumen no están directamente relacionados con los objetivos, pero son interesantes para investigaciones futuras.	Cuando el resumen no es acorde a los criterios de inclusión, pero el tema está relacionado con el estudio y puede ser interesante para futuros trabajos.	Excluir la referencia, pero archivarla en otra carpeta.

Fuente: elaboración propia

En la etapa de inclusión se procede a la lectura y análisis del texto completo de los artículos seleccionados anteriormente. A fin de resumir la información relevante de forma estructurada, coherente, y orientada a las preguntas de investigación, decidimos crear una tabla que relaciona cada artículo con unos ítems específicos, que se resumen en la tabla 8. Este método nos permite extraer la información necesaria de cada artículo. Asimismo, es útil para evitar la lectura de los diferentes artículos al cabo de un periodo de tiempo. En el **anexo A** se muestra la tabla completa por artículo.

Tabla 8: Art.1 AMO - ítems utilizados (etapa de inclusión)

Campo	Descripción
Artículo	Autor, año y título del artículo
Objetivos	Breve descripción de los objetivos del estudio
¿AMO test?	Indicar si la investigación estudia de manera práctica la relación entre el modelo AMO y el rendimiento mediante métodos estadísticos.
Modelo AMO	Tipo de relación del modelo (sumativo, multiplicativo, indeterminado...)
Tipo de estudio	Tipo de estudio (longitudinal, revisión de literatura, modelo teórico, análisis multinivel, caso de estudio...)
Año	Año de realización del estudio
País	País donde se realiza la investigación
Muestra	Tipo y tamaño de la muestra utilizada en el estudio
Hipótesis AMO	Identificar si las hipótesis del estudio hacen referencia a la relación entre el modelo AMO y el rendimiento
Rendimiento	Variables utilizadas para medir el rendimiento (ej. eficiencia, productividad, satisfacción en el trabajo, rendimiento financiero...)
Prácticas Habilidades (A)	Prácticas de RRHH utilizadas en el estudio para incrementar las habilidades de los empleados (ej. desarrollo de competencias, criterios de selección, entrenamiento...)
Prácticas Motivación (M)	Prácticas de RRHH utilizadas en el estudio para incrementar la motivación de los empleados (ej. incentivos, pago por objetivos, bonus individual o de grupo...)
Prácticas Oportunidades (O)	Prácticas de RRHH utilizadas en el estudio para incrementar las oportunidades de los empleados (ej. círculos de calidad, actividades para implicar a los empleados, transmisión de información...)
VARIABLES DE CONTROL	Variables utilizadas para ajustar la relación entre variables dependientes o independientes. A nivel organizacional (ej. tamaño o antigüedad de la empresa...), o a nivel individual (edad, posición en la empresa, nivel educativo...)
Resultados	Indicar si las hipótesis planteadas son aceptadas o no. Se utiliza este campo también para exponer las conclusiones principales de los estudios que no tienen hipótesis relacionadas con la relación entre el modelo AMO y el rendimiento

Fuente: elaboración propia

#### 4.2 Análisis estadístico multivariante (GLM, PLS-SEM)

A lo largo de la tesis se han empleado diversas herramientas y técnicas estadísticas para el tratamiento y análisis de datos. Dichos métodos se han seleccionado en función de las necesidades de cada uno de los artículos planteados, salvo en el caso del primero, que al tratarse de una revisión sistemática de literatura con enfoque documental no precisa de ningún análisis.

En primer lugar, hemos utilizado métodos sencillos de estadística descriptiva para recoger y gestionar los datos, analizarlos, y presentar los resultados en tablas y diagramas que proporcionan información sobre las características del conjunto de datos seleccionados para el estudio. La estadística descriptiva permite visualizar los datos de manera comprensible y estructurada, y resumir datos cuantitativos complejos. Concretamente, en la mayor parte de los artículos de la tesis se ha utilizado la distribución de frecuencias, medidas de variabilidad y medidas de tendencia central.

Además, se han utilizado también técnicas estadísticas más complejas, como el modelo lineal generalizado (GLM), o la regresión de mínimos cuadrados parciales (PLS-SEM). El modelo lineal generalizado permite relacionar linealmente los factores y la variable dependiente con una determinada función de enlace, permitiendo además utilizar

distribuciones no normales de los errores (binomiales, gamma, Poisson, etc.). De este modo, es útil para comprobar como diversas variables afectan a variables continuas. Por este motivo, en el tercer artículo de la tesis hemos usado GLM para explorar los factores que la puesta en marcha de los programas de remuneración, y así poder dar respuesta a una de las preguntas de investigación planteadas. EL GLM cubre los modelos estadísticos más utilizados, como la regresión lineal para distribuciones normales, modelos loglineales para datos de recuento, o modelos logísticos para datos binarios.

Por otro lado, la regresión de mínimos cuadrados parciales (PLS-SEM) permite ajustar en un solo modelo múltiples variables de respuesta. Esta técnica estadística reduce el número de predictores a un conjunto más pequeño de componentes no correlacionado, y realiza una regresión sobre ellos, en lugar de sobre los datos originales. En este sentido, la regresión PLS-SEM utiliza con frecuencia un sistema de validación cruzada para optimizar la capacidad predictiva, determinando el número adecuado de componentes que debe conservar el modelo. Por este motivo, en el cuarto artículo de la tesis hemos utilizado la regresión PLS-SEM, ya que permite explorar un modelo mucho más sencillo y con menos iteraciones para determinar qué factores influyen sobre la satisfacción en el trabajo en los modelos AMO multiplicativo y sumativo.



## Capítulo 2: Deconstructing AMO framework: A systematic review





## Deconstructing AMO framework: a systematic review

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### Abstract

**Purpose:** The AMO framework has been widely accepted in HRM literature for explaining the linkage between human resources practices and performance. However, it remains unclear whether this model has been fully demonstrated or not. Hence, we propose a systematic review that aims at identifying those investigations that have thoroughly tested the model, as well as the approaches used by them.

**Design/methodology:** Systematic literature review, filtering scientific papers published in journals indexed in Scopus, Web of Science or Google Scholar, from the year 1993 to 2016, in the field of Social Sciences and Humanities with research that indirectly apply the AMO model in their analysis.

**Findings:** AMO model is an excellent and structured framework that provides a better understanding of the relationship between HRM and performance. Moreover, the effectiveness of the model's proposal appears to be beyond doubt. In fact, a well-trained and skilled employee will perform better, and a motivated worker will be ready to "go the extra mile". Likewise, if the work environment does not provide adequate opportunities, both abilities and motivation might become meaningless. However, we consider that many other factors could influence the positive effects of HPWS. As a matter of fact, not only contextual factors, but also individual beliefs, personal affinities, or personal circumstances (among others) might affect the implementation of these practices and the subsequent outcomes. For this reason, we consider that developing an HRM model that perfectly fit any situation is a very complicated, if not impossible, task.

**Research limitations/implications:** The results show a significant variability in both research approaches and variables taken into consideration. In addition, it seems that little research has been conducted to verify the AMO model directly. Therefore, we consider that there is a great need to study the model from a more systematic perspective. A thorough understanding of the model could lead to a better understanding of the problems that organizations face when implementing human resource practices.

**Originality/value:** Our study shed light on some aspects of the AMO framework within the HRM context. Specifically, we aimed to identify whether it is possible to confirm the model as it was originally proposed. We also find out which HR practices and measures of performance were considered across investigations, to define a standard approach.

**Keywords:** Systematic literature review, Human resources management, High-performance work practices, High-performance work systems, AMO framework, Ability-motivation-opportunity model, Organizational performance

## 1. Introduction

Since its emergence in 2000, the ability, motivation and opportunity (AMO) framework (Appelbaum et al., 2000; Boxall & Purcell, 2003) has been largely accepted for explaining the linkage between human resources management and performance. In fact, many of the articles published after 2000 that explore the HRM-performance linkage use this theoretical framework either explicitly or implicitly (Boselie et al., 2005; Ehrnrooth & Björkman, 2012; Hutchinson, 2013; Paauwe & Boselie, 2005).

According to some authors, the origins of the model lie in the theoretical discourse between industrial psychologists (e.g. Lawshe, 1945), who assume that performance is a function of training and selection (thus ability), and social psychologists (e.g. Wvatt, 1934), who believe that motivation is essential to ensure performance (MacInnis & Jaworski, 1989). Later, Vroom (1964) adopted an interactive relationship considering both ability and motivation, and explaining performance by the function  $P = f(A \times M)$  (Blumberg & Pringle, 1982). As can be seen, this function considered that only personal dimensions affect performance, and was not capable of explaining the external environment effect. With the aim of solving this issue, Blumberg and Pringle (1982) developed a new model, broadening the concepts of motivation and ability, and introducing a new one: opportunity, which they considered the missing dimension. As a result, performance was a function of capacity to perform (including different variables such as age, knowledge, level of education and energy level), willingness to perform (including variables such as motivation, job satisfaction, personality, values, and expectations), and opportunity to perform (that included variables such as working conditions, tools, materials, leader behaviour, procedures and time) (Blumberg & Pringle, 1982). These authors pointed out that all three elements (opportunity, capacity, and willingness) must be present for performance to occur, assuming an interactive model ( $P = f(O \times C \times W)$ ). Also, low levels of any of the dimensions would considerably decrease levels of performance (Blumberg & Pringle, 1982).

The AMO framework was initially proposed by Bailey (1993), who suggested that ensuring the employee's discretionary effort needed three components: employees had to have the necessary skills, they needed appropriate motivation and employers had to offer them the opportunity to participate (Appelbaum et al., 2000). Based on this model, and drawing on the concept of high performance work systems (HPWS), the model was later developed by Appelbaum, Bailey, Berg and Kalleberg (2000) (Bayo-Moriones & Galdon-Sanchez, 2010; Claudia, 2015), and its acronym stands for the three elements that enhance together employee performance: individual ability (A), motivation (M), and the opportunity to participate (O) (Boselie, 2010; Knies & Leisink, 2014; Kroon et al., 2013; Munteanu, 2014). According to the model, people perform well when they have the capabilities, they have the adequate motivation, and their work environment provides opportunities to participate (Boxall & Purcell, 2003) quoted in (Boselie, 2010; J.-H. Choi, 2014; Raidén et al., 2006).

Hence, the model is comprised of basic concepts of psychology (Kroon et al., 2013), which are related to three systems that shape individual characteristics: ensuring that employees have the appropriate abilities, motivating employees to enhance discretionary behaviour, and empowering them toward organizational outcomes (Harney & Jordan, 2008). Ability dimension is usually defined by the acronym KSA (knowledge, skills and abilities) (Fu et al., 2013). Thus,

Ability-enhancing practices aim to improve those three components. Examples of these practices are employee recruitment techniques or formal training (Kroon et al., 2013; Raidén et al., 2006). Motivation deals with an employee desire to perform, which can be enhanced by extrinsic or intrinsic motivation. Examples of motivation-enhancing practices are incentives or career opportunities (Munteanu, 2014; Raidén et al., 2006). The AMO model introduces the opportunity dimension as well, based on job design theories (Hackman and Oldham 1980), or empowerment literature (Gerhart 2007) both cited in Kroon et al. (2013). Hence, opportunity takes into consideration not only individual characteristics but also the work environment. Practices contributing to the opportunity dimension are, for instance, quality circles or team working.

The model has evolved and improved over successive studies. As a matter of fact, some authors consider that AMO influence in performance is more complicated than expected, because it depends not only on the existence of a set of practices (HRM content) but also on the employee subjective perceptions of these practices (Lepak et al., 2006; Boxall and Macky, 2009; Wright and Nishii, 2007) cited in Ehrnrooth & Björkman (2012). That is to say; we must distinguish between intended, actual and perceived HRM (Vermeeren, 2010). Moreover, some authors point out that the employee-based perspective adopted by the AMO model could be better explained from a managerial perspective (Bos-Nehles et al., 2013). This view claims that well-designed HR bundles of practices do not guarantee an effective implementation, and focus on line manager's capacities to implement HR practices (A), their motivation to enable them (M), and the organizational support for undertaking the changes needed (O) (Bainbridge, 2015; Ozcelik & Uyargil, 2015). Besides, the variety of practices and measures of performance across investigations, make it difficult to state firm conclusions about which approach is decisive for performance. In fact, the selection of practices seem to be based more on intuition about their influence over performance, than on substantial empirical evidence (Wood et al., 2015). As a result, it remains unclear which are the linking mechanisms between bundles of practices and organizational outcomes (Jiang, Lepak, Hu, et al., 2012; Renwick et al., 2012; Vermeeren, 2010). Finally, although many investigations mention the AMO model in their theoretical framework, not all of them test the model in their further analysis and, even doing it; it seems that many of them do not apply the model as it was first proposed.

Taking all the above into account, as well as the importance of the AMO model in the human resources literature, we consider that it is necessary to conduct an investigation to shed light on some fundamental issues concerning the AMO framework. Hence, this study aims to find out those studies that have thoroughly tested the model, as well as the approach used by them (e.g., multiplicative, or summative). Furthermore, it also aims to clarify how different authors measure the effectiveness of the model, that is to say, which HR practices and measures of performance they use in their analysis. Finally, another objective of this research is to determine whether the AMO framework is useful or not in explaining the linkage between HRM and performance in different context.

We have divided the study as follows. The first section deals with the introduction. The second section outlines the conceptual framework, explaining the important concepts, as well as identifying the interrelationships among them. The third section details the methodology carried

out, which as the title states is a systematic literature review. The aim of this review is to ensure a structured and replicable work that will help us to both state the research questions and identify the current state-of-the-art in the field of study. In the fourth section, the results of the study are examined, with the aim of answering thoroughly to questions raised. Finally, the fifth section is devoted to state the conclusions and possible future research.

## **2. Conceptual framework**

The following conceptual framework (Figure 1) aims to understand how the concepts involved in this study fit and work together. This framework takes into consideration several concepts explained below.

Human resource management (HRM) is defined as the design of employment systems that include a set of policies intended to maximize employee performance and commitment, to meet the organization goals (Guest, 1997) cited in Alagaraja (2012). Several factors shape HRM (see Figure 1), for instance, the external environment (e.g., economic conditions, competitors), the organizational strategy (e.g., low cost or focus differentiation strategy) and the organizational characteristics themselves (e.g., industry sector, organization size, management style). During the last decades, HRM research has explored the linkage between human resources practices and performance. As a result, several studies have documented a positive relationship between the use of HPWS and business performance (e.g. (Huselid, 1995; Jiang et al., 2012) cited in Rabl, Jayasinghe, Gerhart & Kühlmann (2014), (Arthur, 1994; MacDuffie, 1995) cited in Liu, Guthrie, Flood & Maccurtain (2009), and (Appelbaum et al., 2000; Block & Pickl, 2014; Demortier et al., 2014; Knies & Leisink, 2014).

The term high-performance work practices (also referred in the literature as high-commitment management, high-involvement management or innovative work practices (Bayo-Moriones & Galdon-Sanchez, 2010; Marín-García & Conci, 2012)) apply to a broad set of human resource practices that aim to make organizations more participative and flexible, with the objective of being capable of competing in the current environment (Kalleberg, 2006). The HIW practices include three dimensions: skill requirements, jobs designed to use those skills, and an incentive structure to induce discretionary effort (Appelbaum et al., 2000). These practices are intended to increase business performance by enhancing employee ability, motivation and opportunity to contribute (Bayo-Moriones & Galdon-Sanchez, 2010; Rabl et al., 2014). Moreover, implementing these practices leads to ensuring that all employees can contribute towards the goals of the organization (Ashton & Sung, 2002), cited in Robineau, Ohana & Swaton (2015).

Additionally, high-performance work systems (HPWS) (also known as "high commitment management" (Arthur, 1994) or "HR practice configurations" (Delery and Doty 1996), both cited in Choi (2014) are a combination of HPW practices, which are hypothesized to create synergistic effects (Bayo-Moriones & Galdon-Sanchez, 2010; Della Torre & Solari, 2013; Marín-García & Conci, 2012; Rabl et al., 2014). According to these synergies, performance obtained by using bundles of practices will be greater than the sum of individual effects achieved by applying separately each of them (An, 2009; Boxall et al., 2009; Demortier et al., 2014; Drummond &

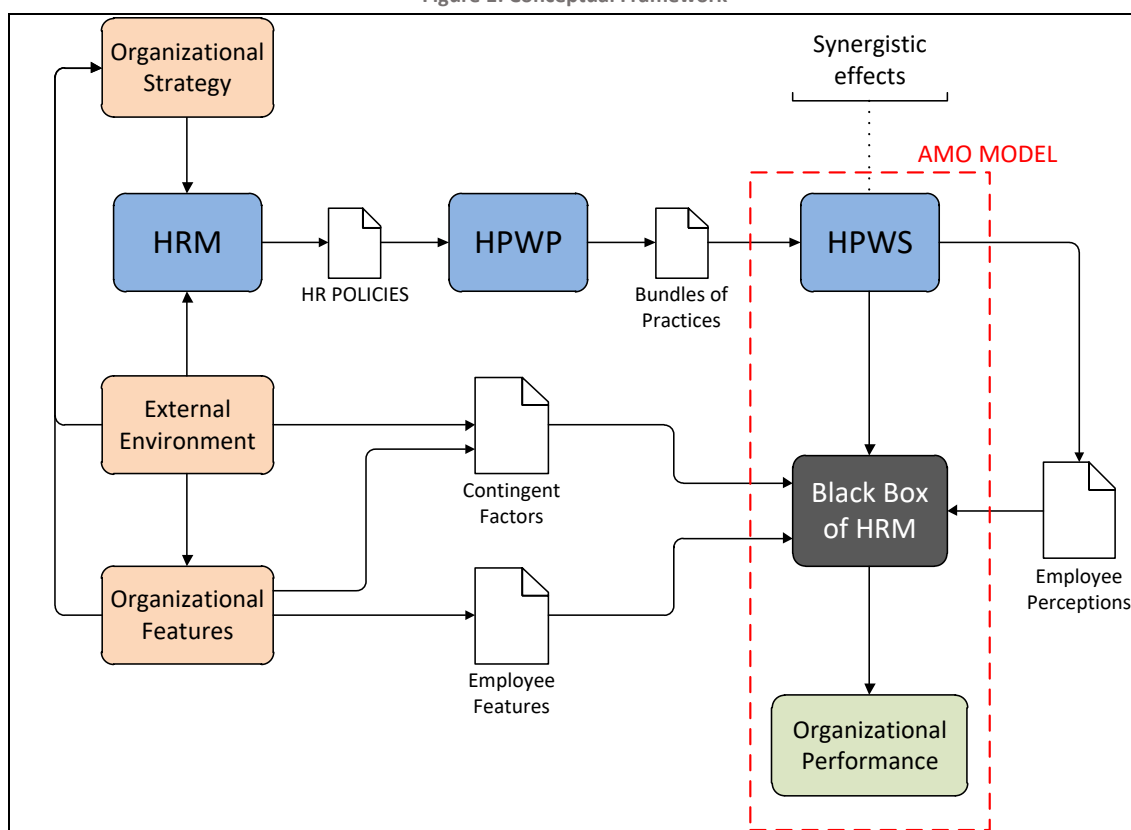
Stone, 2007; Jiang, Lepak, Hu, et al., 2012; Minbaeva, 2013). As a matter of fact, introducing self-managed work teams without the support of management and proper training will reduce the results expected from teamwork (McDuffie, 1995) cited in Kroon et al. (2013). In the same vein, other authors point out neither ability nor motivation alone can lead to the highest performance (Sarikwal et al., 2013).

Many authors support the synergistic effect hypothesis. However, there is no consensus in determining which specific practices must form the HPWS bundle. In fact, practices taken into consideration differ from one investigation to another (Kroon et al., 2013). In this regard, some authors point out that transferability of HIWS becomes impossible, as those systems must be more or less customized to meet the requirement of each particular context (Ehrnrooth & Björkman, 2012). This view is known as the contingency theory, and states that the efficacy of such systems depend on many factors, including external environment, internal consistency and coherence (systems developed taking into the account the nature of the firm) and dynamism (systems are capable of evolving as companies change) (Ehrnrooth & Björkman, 2012). In other words, the contingency theory defends the “best fit” approach in contrast to the universalistic view, which considers the “best practice” approach.

Also, there is not a clear consensus for explaining the precise mechanisms of how HR systems work to reach the objectives (Guest, 2011) cited in Block & Pickl (2014) and (Messersmith, Patel, Lepak, & Gould-Williams, 2011) quoted in Demortier et al. (2014). This mystery is popularly known as the “black box” of HRM (Gerhart, 2005; Paauwe, 2004) cited in (Harney & Jordan, 2008; Innocenti et al., 2011). In this respect, Boselie et al. (2005) conducted a literature review to analyse the linkages between HRM and performance between 1994 and 2003, and found that many studies acknowledge the existence of the “black box”, but few of them tried to look inside it (Boselie et al., 2005).

The AMO framework has been considered by many authors as a useful tool for understanding the HRM-performance linkage or, in other works, opening the so-called black box (Boselie et al., 2005; Demortier et al., 2014; Knies & Leisink, 2014). However, some authors point out that this issue should be handled in a more comprehensive way (from a contingent perspective), by integrating mediating variables. Examples of mediating variables are: employee’s individual characteristics (e.g. attitudes and behaviour (Gardner et al., 2001; Kehoe and Wright, 2013) quoted in Block & Pickl (2014)), line-managers features (e.g. leadership style or affective commitment (Demortier et al., 2014)), or organizational level dimensions such as climate or culture (Gelade & Ivery, 2003) cited in Demortier et al. (2014)).

Figure 1: Conceptual Framework



Source: prepared by the authors

## 2.1. Why is important to do this review?

The aim of this study is to identify whether the AMO framework has been fully confirmed in the way it was first proposed. We consider that it is an interesting issue because the AMO framework is widely accepted in human resource management for explaining the linkage between high involvement work practices and performance. Therefore, a thorough understanding of the model could lead to a better understanding of the problems that organizations face when implementing human resource practices.

As far as this objective is concerned, it is essential first to analyse the original model and its orientation in the field of human resources management. That is to say; we must know what the authors proposed to have it as a starting point for the investigation.

Furthermore, it is also important to identify those investigations that have been conducted with the specific objective of validating the model. Likewise, it is also important to exclude those studies citing the AMO model in their theoretical framework, but not apply it in their further analysis. As we do not expect to find many investigations that directly test the model, we decided to also include those articles that indirectly verify the model in their analysis.

Finally, the study must provide information regarding which ability, motivation, and opportunity-enhancing practices have been considered through different studies, as well as how organization performance has been measured. Identifying those factors is critical to provide an extensive overview of the current state-of-the-art.

### **3. Methodology**

We started this study by setting up a searching protocol, with the aim of synthesizing the best available research concerning AMO framework in human resource management field. Moreover, this systematic review protocol uses transparent procedures for ensuring a structured work that could be easily replicated in future research. Finally, this searching protocol was also designed to minimize bias (Marín-García et al., 2015).

For that reason, we first posed the above issue: "Why is important to do this review?" that led us to identify several research questions. Next, we defined the inclusion and exclusion criteria, as well as the keywords related to this research. The automatic search was conducted in three databases (Scopus, Web of Science, and Google Scholar) and later, we defined a filtering methodology for codifying and selecting those articles relevant to the study. Finally, we created a template for extracting information in a structured manner and being able to answer our research questions. The whole process is described below.

#### **3.1. Inclusion and exclusion criteria of this review**

##### **3.1.1. Inclusion criteria**

- Scientific papers in journals indexed in Scopus, Web of Science or Google Scholar.
- Articles or reviews published from the year 1993 to 2016, in the field of Social Sciences and Humanities, especially those related to the human resources management.
- Articles written in English or Spanish.
- Research conducted with the specific objective of validating the AMO framework.
- Research that indirectly apply the AMO model in their analysis, linking abilities, motivation, and opportunity enhancing practices to performance.

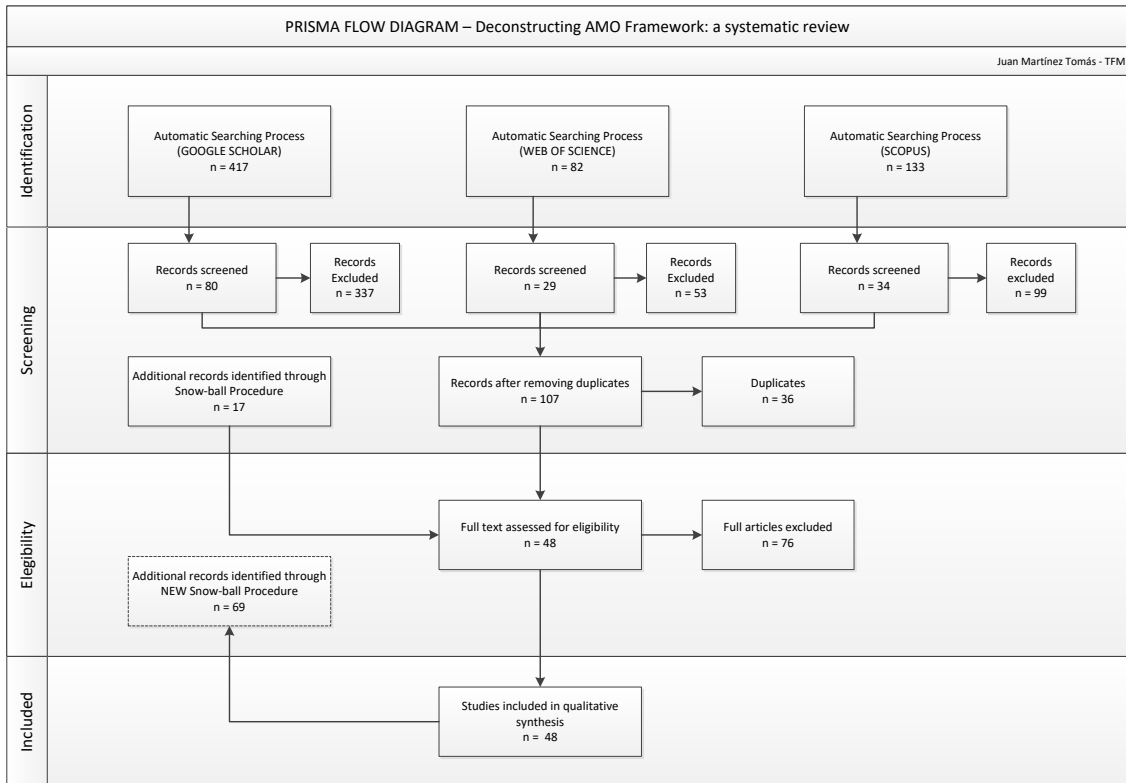
##### **3.1.2. Exclusion criteria**

- Articles or reviews published before 1993.
- Articles written in languages other than English or Spanish.
- Research not related to human resources management.
- Research that does not apply the AMO model in their analysis, even when they name it in the theoretical framework.
- Research related to AMO framework for explaining consumption patterns, consumer behaviour, consumer psychology, advertisement strategies or marketing approaches.

#### **3.2. Searching Protocol**

We structured the searching protocol in four different stages: Identification, screening, eligibility, and Inclusion. The following PRISMA diagram (Figure 2) shows all these phases graphically:

Figure 2: Prisma Flow diagram



In the Identification stage, the results have been drawn from searches conducted in Scopus, Web of Science and Google Scholar, as can be seen in the table below (Table 1). In both Scopus and Web of Science, the results were obtained by using the terms: ability, opportunity, and motivation, in combination with the terms HRM and human resources.

In Google Scholar we used the following strategies:

- 1st search: articles that explicit mention Bailey’s 1993 article “Discretionary effort and the organization of work: employee participation and work reform since Hawthorne”, which is supposed to be the origin of AMO framework in the context of human resources (10 results).
- 2nd search: articles citing the article above (cited by 233), as well as containing the term AMO (21 results).
- 3rd search: results obtained by using the terms: ability, motivation, and opportunity, as well as the term Bailey (125 results).
- 4th search: results obtained by using the terms AMO framework, AMO model or AMO theory in combination with the terms HRM and human resources. Also, we added the term Bailey, with the aim of reducing the results obtained (261 results).



Table 1: Automatic Search Strategy (Search conducted in February 2016)

Scopus	Results
TITLE-ABS-KEY ( amo AND ( theory OR framework OR model ) ) AND DOCTYPE ( ar OR re ) AND SUBJAREA ( mult OR arts OR busi OR deci OR econ OR psyc OR soci ) AND PUBYEAR > 1999	31
( TITLE-ABS-KEY ( ( ability W/3 motivation W/3 opportunity ) ) OR TITLE-ABS-KEY ( ( amo AND ( human OR hr ) ) ) ) AND DOCTYPE ( ar OR re ) AND SUBJAREA ( mult OR arts OR busi OR deci OR econ OR psyc OR soci ) AND PUBYEAR > 1988	102
Web of Science	Results
<b>TOPIC:</b> ((( ability near/3 motivation near/3 opportunity ) OR ( amo AND ( human OR hrm ) ))) <b>Refined by: WEB OF SCIENCE CATEGORIES:</b> ( BUSINESS OR MANAGEMENT OR PSYCHOLOGY SOCIAL OR INDUSTRIAL RELATIONS LABOR OR OPERATIONS RESEARCH MANAGEMENT SCIENCE OR ENGINEERING MANUFACTURING OR ECONOMICS OR BUSINESS FINANCE OR ENGINEERING INDUSTRIAL ) <i>Indexes=SCI-EXPANDED, SSCI, A&amp;HCI, CPCI-S, CPCI-SSH, ESCI Timespan=All years</i>	82
Google Scholar	Results
("amo framework" OR "amo model" OR "amo theory") ("HRM" OR "human") (bailey) <a href="https://scholar.google.es/scholar?q=%28%22amo+framework%22+OR+%22amo+model%22+OR+%22amo+theory%22%29+%28%22HRM%22+OR+%22human%22%29+%28bailey%29&amp;hl=en&amp;as_sdt=1%2C5&amp;as_ylo=1985&amp;as_yhi=2016">https://scholar.google.es/scholar?q=%28%22amo+framework%22+OR+%22amo+model%22+OR+%22amo+theory%22%29+%28%22HRM%22+OR+%22human%22%29+%28bailey%29&amp;hl=en&amp;as_sdt=1%2C5&amp;as_ylo=1985&amp;as_yhi=2016</a>	261 (Stop 180)
Ability-Motivation-Opportunity bailey <a href="https://scholar.google.es/scholar?q=Ability-Motivation-Opportunity+bailey&amp;hl=en&amp;as_sdt=0&amp;as_vis=1&amp;oi=scholar&amp;sa=X&amp;ved=0ahUKEwj5yPLfk_DKAh_WCsxQKHT2UDBEQgQMIHjAA">https://scholar.google.es/scholar?q=Ability-Motivation-Opportunity+bailey&amp;hl=en&amp;as_sdt=0&amp;as_vis=1&amp;oi=scholar&amp;sa=X&amp;ved=0ahUKEwj5yPLfk_DKAh_WCsxQKHT2UDBEQgQMIHjAA</a>	125 (Stop 80)
Bailey, T. (1993), "Discretionary effort and the organization of work: employee participation and work reform since Hawthorne", unpublished manuscript, Teachers College, Columbia University, New York, NY <a href="https://scholar.google.es/scholar?q=Bailey%2C+T.+%281993%29%2C+%E2%80%9CDiscretionary+effort+and+the+organization+of+work%3A+employee+participation+and+work+reform+since+Hawthorne%E2%80%9D%2C+unpublished+manuscript%2C+Teachers+College%2C+Columbia+University%2C+New+York%2C+NY&amp;btnG=&amp;hl=en&amp;as_sdt=0%2C5&amp;as_vis=1">https://scholar.google.es/scholar?q=Bailey%2C+T.+%281993%29%2C+%E2%80%9CDiscretionary+effort+and+the+organization+of+work%3A+employee+participation+and+work+reform+since+Hawthorne%E2%80%9D%2C+unpublished+manuscript%2C+Teachers+College%2C+Columbia+University%2C+New+York%2C+NY&amp;btnG=&amp;hl=en&amp;as_sdt=0%2C5&amp;as_vis=1</a>	10
"Discretionary effort and the organization of work: employee participation and work reform since Hawthorne". Cited by 233. Search "AMO" within citing articles. <a href="https://scholar.google.es/scholar?q=AMO&amp;btnG=&amp;hl=en&amp;as_sdt=2005&amp;sciodt=1%2C5&amp;cites=4840032375480612111&amp;scipsc=1">https://scholar.google.es/scholar?q=AMO&amp;btnG=&amp;hl=en&amp;as_sdt=2005&amp;sciodt=1%2C5&amp;cites=4840032375480612111&amp;scipsc=1</a>	21

During the screening stage, with the aim of avoiding excluding references that could meet the criteria, we decided to filter them manually by using the following methodology:

- Sort the articles by relevance.
- Review both titles and abstracts, excluding those articles that are clearly not related to the objectives explained above.
- Review both titles and abstracts, selecting those articles that could meet the inclusion criteria defined above. Store these results in a reference manager software (Mendeley) for further review.
- Download the full text of the documents selected in this first stage.
- Taking into consideration the filtering limitations of Google Scholar and the large number of results obtained in both the third and the fourth search strategies, we decided to stop the search in the page where no reference met our inclusion criteria.

The articles selected in this stage were stored in three different folders of Mendeley for each of the databases used. For that reason, the last action within the filtering stage was checking for duplicates and excluding them.

In the eligibility stage, we proceeded to the filtering process of the selected documents, using the following method:

- Sorting the references by title in alphabetic order, with the aim of minimizing potential bias caused by factors such as relevance or year of publication.
- We classify references starting from the first one (according to the title and abstract) with the following codification (Table 2):

Table 2: Codification for eligibility stage

Code	Definition	When to use	Action
<b>A. Approved</b>	The title and the abstract are clearly related to the objectives of the study.	When the article meets the inclusion criteria and does not affect the exclusion criteria.	Include the article in the list of references.
<b>R. Rejected</b>	The title and the abstract show no relation to the objectives of the study.	When the article meets the exclusion criteria.	Exclude this reference
<b>Q. Questionable</b>	The article and the abstract are not clearly related to the objectives of the study.	When the abstract does not show clear evidence of meeting the inclusion criteria but seem to be related to them.	Analyse the full text to determine whether this reference must be included in the study.
<b>I. Interesting</b>	The article and the abstract are not explicitly related to the objectives, but the topic is interesting for further research.	When the abstract shows no evidence of meeting the inclusion criteria, but the issue is related to the study, and could be interesting for further studies.	Exclude this reference but archive it in another folder.

Also, we use the snowball procedure to incorporate new references once we finish the methodology commented above.

All the references codified with “Approved” and “Questionable” code were stored in a new folder of Mendeley reference manager. As a result, 48 studies were selected for the inclusion stage.

In the inclusion stage, with the aim of extracting the information of the articles selected in a structured manner, and being able to answer the research questions, we decided to create a table made up of the following items:

- Article: specifying the author, year, and title of the article (i.e., Boselie, P. (2010). High-performance work practices in the health care sector: a Dutch case study.)
- Objectives: a short description about the aim of the study (i.e. “To present an empirical study of the effect of high-performance work practices on commitment and citizenship behaviour in the health care sector” (Boselie, 2010)).
- AMO test? Used for indicating whether the study checks either directly or indirectly the AMO framework. That is to say; we answer YES when the study measures the AMO-performance link based on a sample and using statistical methods.

- AMO model: the articles were codified as follows:
  - $\text{sum } P = f(A + M + O)$ : summative model, that is to say, the ability, motivation or opportunity-enhancing practices contribute independently to performance, even when the other practices are not implemented.
  - $\text{mult } P = f(A \times M \times O)$ : multiplicative (or interactive) model, which means that ability, motivation, and opportunity practices must be present to ensure performance.
  - $\text{indet } P = f(A, M, O)$ : We used this code when the study did not explicitly apply either summative or multiplicative model in their statistical analysis.
  - N/A: We used this code for studies that did not use any statistical analysis.
- Study: indicating the type of the study (i.e., cross sectional, multilevel analysis, longitudinal, literature review, theoretical model, theory building, interview, survey, questionnaire)
- Year: indicating when the study was conducted or (if this information is not available) the year of publication.
- Country: indicating the country/s where the study was conducted.
- Sample: specifying the type of sampling and sample size used in the study, either at the firm level (i.e., manufacturing or accounting firms) or the individual level (i.e., HR managers, line managers, front-line employees).
- Hypothesis (related to AMO framework): used for identifying (if any) those hypotheses related to the relationship between ability, motivation and/or opportunity practices and organization performance (i.e. "H2a. High scores on perceived HPWPs that enhance abilities (e.g. skills training, general training, coaching) are positively related to high levels of organizational citizenship behaviour (OCB)" (Boselie, 2010)).
- Measures of Organization Performance: used for detecting the outcomes used in every study (i.e., productivity, financial performance, turnover intention, employee commitment, efficiency).
- Ability-enhancing practices: human resources practices utilized in the study for boosting employee abilities (A) (i.e., recruitment and selection, training, skill development).
- Motivation-enhancing practices: human resources practices utilized in the study for increasing employee motivation (M) (i.e., incentives, recognition, pay for performance, group bonuses, job security).
- Opportunity-enhancing practices: human resources practices used in the study for boosting employee opportunities (O) (i.e., quality circles, self-directed work teams, employee involvement activities).
- Control variables: used for identifying the variables used to adjust the relative relationship between the dependent and independent variables, either at the

organizational level (i.e., firm age, firm size) or the individual level (i.e., gender, age, educational level, tenure, position level).

- Results: we used this item for indicating whether the hypotheses proposed were supported. Also, we used this item for quoting the main conclusion of those studies when no hypothesis related to AMO model was found.

All the 48 studies selected for the inclusion stage were classified according to the items commented above. Therefore, it was necessary to read and analyse the full text of every one of them. The aim was filling out the table in a comprehensive manner, extracting further conclusions without the need to re-analyse those studies again.

#### **4. Results**

After a careful evaluation of the articles, we consider the review protocol to be valid, since almost every study selected is directly or indirectly related to the AMO framework. Furthermore, as the results were drawn from three different databases, we assume that the sample obtained should adequately cover the current investigations related to the topic. In fact, although Scopus and Web of Science databases only include both the title and the abstract in their automatic search, Google Scholar seeks the chosen terms in the whole article, which should avoid as much as possible the dismissal of relevant studies. Nonetheless, we expect to find out almost every article related to the topic through the snowball strategy performed during the inclusion stage.

All the reviewed articles mention the AMO model in their theoretical framework. Moreover, 33 of them provide a statistical analysis that measures the relationship between ability, motivation, and opportunity-enhancing practices and performance. The other 15 did not conduct any statistical analysis, since they carried out either a literature review (Alagaraja, 2012; Boselie et al., 2005; Drummond & Stone, 2007; Jiang, Lepak, Hu, et al., 2012; Munteanu, 2014), a theoretical model development (Block & Pickl, 2014; Hughes, 2007; Minbaeva, 2013), or a case study (Claudia, 2015; Harney & Jordan, 2008). However, in almost every of them, it was possible to extract measures of operational performance, as well as examples of ability, motivation, and opportunity-enhancing practices.

As we predicted, not many studies of the sample have the objective of directly validating the AMO framework. In fact, only three of them include that issue as their primary goal (Demortier et al., 2014; Kim et al., 2015; Obeidat et al., 2010). As a result, it seems to be a lack of research for explicitly validating the model. Nevertheless, most of the articles indirectly test the model through statistical analysis, which appears to be the common way for analysing the AMO framework.

Keeping this in mind, we consider that the chosen studies should shed light on our initial research questions, and hence we will now move on to analyse them in detail.

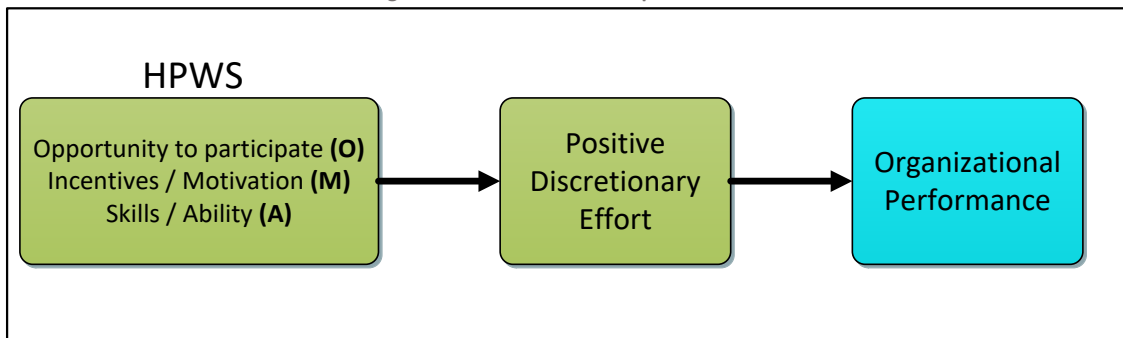
##### **4.1. What is the AMO framework? When was it first proposed?**

Although we have described the origins of the AMO framework in the introduction section, it is important to emphasize some aspects of the original model for a better understanding of the

model and its implications for human resource management. As stated before, the AMO framework was developed by Appelbaum et al. (2000), based on a model previously proposed by Bailey (1993). The aim of the model was to examine the premise that HPWS can help the organization to improve plant performance. To that end, the authors studied the effects of HPWS on plants and employees of three manufacturing industries: steel, apparel and electronic medical instruments (Appelbaum et al., 2000). With the aim of providing a comprehensive picture, they designed multilevel research, collecting data from workers, managers, and plant performance.

The AMO model of performance (Figure 3) suggested that effective HPWS require three essential components to effectively use employees' discretionary effort: the opportunity to participate, appropriate incentives, and policies for developing employees' abilities and skills. Discretionary behaviour refers to the employee's voluntary choice about how to perform their tasks (Boxall & Purcell, 2003). Positive discretionary behaviours are associated to "going the extra mile". That is to say, working beyond the basic requirements, for instance taking additional tasks (Purcell et al., 2003) cited in Hutchinson (2013). According to AMO model, discretionary effort will positively affect organizational performance.

Figure 3: The AMO model of performance



Source: adapted from Appelbaum et al. (2000)

It is important to detail the high-performance work system variables originally proposed by the authors in their empirical analysis. In this regard, they develop the following scales and procedures (Table 3):

Table 3: HPWS scales adapted from Appelbaum et al. (2000)

Scale	Variables	Measures
<b>Opportunity to participate (O)</b>	Autonomy in decision making	1-4 scale: 1 (false) - 4 (true)
	Self-directed team membership	Yes / No
	Offline team membership	0 = No / 1 = Yes
	Communication	1-5 scale: 1 (never) - 5 (daily)
<b>Skills (A)</b>	Formal training	Yes / No
	Informal training	1-4 scale: 1 (not at all) - 4 (to a great extend)
	Seniority	-----
	Education	Low education (1-8) / High school (9-11)
<b>Incentives (M)</b>	Employment security	1-4 scale: 1 (false) - 4 (true)
	Company is competitive	1-4 scale: 1 (false) - 4 (true)
	Company shares information	1-4 scale: 1 (false) - 4 (true)
	Promotion opportunities	0 = No / 1 = Yes

	Company helps with work-family conflicts	1-4 scale: 1 (not at all) - 4 (to a great extend)
	Pay	Weekly earnings
	Pay is fair	1-4 scale: 1 (dissatisfied) - 4 (satisfied)
	Pay for performance	0 = No / 1 = Yes

Finally, it is also interesting to point out the measures of performance used by the authors in their empirical analyses. On the one hand, they examined the effects of HPWS on organizational performance, by using specific performance measures in each industry. As a matter of fact, they conducted a longitudinal study within the steel industry, comparing the monthly delay rates by department. The goal was measuring the effect of HPWS on uptime. In the apparel industry, however, the measures of performance were related to product quality, throughput time, capital utilization and space utilization. Finally, in the medical electronic instruments industry, the measures of performance were the following: value added, operating profit, work-in-process inventory, overall productivity, and overall quality. Overall, they demonstrated that HPWS had a positive effect on organization performance in each industry.

On the other hand, the authors also considered the effects of HPWS on workers outcomes. Specifically, they studied five worker outcomes: the extent to which employees trust their managers, the intrinsically job perception, organizational commitment, job satisfaction, and work-related stress. Finally, they also investigated the effect of HPWS on earnings of employees, as well as on productivity growth.

#### **4.2. Which other HIWP models complement or substitute the AMO framework?**

Along our review protocol, we have identified several theoretical frameworks that either complete the AMO model or propose a different point of view in explaining the linkage between human resources management and performance. Identifying those theoretical frameworks provides valuable information about the assumptions (as well as the selection of specific HR practices and performance outcomes) used by different authors (Boselie et al., 2005). In fact, some authors consider that the AMO framework can be reinforced through other mechanisms for thoroughly explain the HRM-performance linkage (Demortier et al., 2014). Although we identified many theories, it is important to underline three of them, which frequently appear in many of the studies: the contingent framework, the resource-based view model, and the social exchange theory.

The contingent framework suggests that contextual factors are essential for understanding this relationship (Schuler & Jackson, 1987) quoted in Alagaraja (2012). Thus, HRM must be able to respond effectively to the organization's environment features (Boselie et al., 2005) and (Delery and Doty, 1996; Hoque, 1999) cited in Ruzic (2015). One example of a contextual factor is the firm's business strategy (i.e. cost leadership or focus differentiation) (Boselie et al., 2005). Contextual factors also involve culture, climate, politics, and social interactions. Organization culture includes core values, beliefs and attitudes of organization's members whereas climate refers to employee's interpretations of the work environment (Raidén et al., 2006).

The resource-based view (RBV) model (Barney, 1995) cited in Alagaraja (2012) and (Barney, 1991; Wright et al., 2001a) mentioned in (Boselie et al., 2005; Katou & Budhwar, 2010) points out that is needed to consider human and social capital held by the organizations. According to this framework, a firm's competitive advantage lies in the valuable, rare, difficult to imitate and non-substitutable resources that it possesses (Boselie et al., 2005; Fu et al., 2013; Ruzic, 2015). Therefore, the RBV perspective suggests that HRM policies directly affect the employee motivation, behaviour, and abilities, which in turn enhance organizational performance (Boxall and Steeneveld, 1999) cited in Katou & Budhwar (2010). In fact, some authors consider that AMO framework is an extension of RBV model (Ruzic, 2015) because it adds the opportunity dimension to the ability and motivation ones.

Social exchange theory (Blau, 1964) cited in (Boselie, 2010; Demortier et al., 2014; Kroon et al., 2013), emphasizes on the relationship between the organization and its employees as an exchange of mutual investment. This theory points out that subjective perceptions of the costs and benefits of maintaining this relationship could affect employee performance (J.-H. Choi, 2014). Eisenberger et al. (1986), cited in (J.-H. Choi, 2014; Knies & Leisink, 2014) extended this theory by explaining that those perceptions could be affected by workplace practices and policies, which may enhance the employee feeling to compensate the organization with appropriate behaviours. The concept used for explaining those subjective perceptions (which in turn explains employee commitment to an organization), is the perceived organizational support (POS) (Knies & Leisink, 2014). High-performance work practices are expected to send positive messages to employees, increasing their willingness to perform better in their job (Godard, 2001) cited in Boselie (2010). These positive messages are also known as signalling effect (Bowen and Ostroff, 2004) quoted in Ehrnrooth & Björkman (2012), which suggest that HRM systems send messages to employees who, in turn, align their efforts toward the organization goals. As a matter of fact, the perceived availability of flexibility practices will enhance employee motivation and performance. The reason is that they will observe positive signals from an organization that cares about their work-life balance (Bal & De Lange, 2015).

Besides the theories mentioned above, it is appropriate to note, if even briefly, the following theoretical frameworks identified in our study:

- Generation theory (Twenge et al., 2010) cited in Bal & De Lange (2015), predicts that younger employees value the flexibility at work more than older workers. However, older workers may use flexibility to counteract the consequences of age-related losses in capabilities, predicted by the lifespan theory of selection, optimization, and compensation (Baltes, 1997) cited in Bal & De Lange (2015). Thus, opportunity-enhancing practices related to flexibility may be appropriate for younger and older workers for different reasons.
- Organizational ethical climates (Victor and Cullen, 1988) cited in Guerici, Radaelli, Siletti, Cirella & Rami Shani (2015) deals with the shared perceptions of what are correct behaviours, feelings, and attitudes within an organization. According to this theory, the organization climate can be egoistic (employees self-interest guide their behaviour), benevolent (well-being of others guide employee's behaviour) or principled (employee behaviour is guided by either informal or formal norms and rules) (Guerici et al., 2015).

Consequently, organization climate may affect the HRM activities to a great extent, by influencing employee commitment and satisfaction.

- The people-performance framework (Purcell et al., 2003) cited in Harney & Jordan (2008) is a comprehensive model that aims to "unlocking the black box" of HRM-performance linkages. This model consists of four key pillars. Pillar 1 is related to HRM practices, and the authors suggest that the HR policy chosen by an organization must be adapted to its organizational context (in line with contingency theory). Pillar 2 takes place inside the "black box" and includes the role of both line managers and employees on applying and perceiving respectively the HRM policies and practices. The authors integrate the AMO framework by suggesting that firm performance is a function of line managers ability, motivation, and opportunity to implement those practices. Pillar 3 deals with managerial style as an important factor to consider, because employee's perceptions may vary significantly depending on the line manager approach. In fact, people are likely to commit more to individuals rather to the overall organization (Becker, 1992) cited in Harney & Jordan (2008). Finally, Pillar 4 considers intermediary measures of people-performance, such as commitment, motivation, and job satisfaction. These measures are necessary for understanding the HRM-performance linkage.
- Resource-poverty perspective (Welsh and White 1981) cited in Kroon et al. (2013), predicts that availability of financial resources and time is related to the organization size. That is to say; small companies have fewer resources to implement HRM practices than larger firms.
- Different behavioural theories, drawn from disciplines such as Psychology or organizational behaviour. Examples of these approaches are expectancy theory (Vroom, 1964), the theory of planned behaviour or theory of values and attitudes (Triandis, 1980), all of them quoted in Hughes (2007).

#### **4.3. What investigations have been conducted to validate the model?**

As we said before, few studies drawn from our systematic review directly test the AMO framework. Considering the searching strategy conducted and the results obtained, it would be surprising the existence of many more investigations testing that issue. Moreover, a quick revision (both title and abstract) of the studies extracted through the snowball procedure seem to support this view. Therefore, it appears to be a lack of research aiming to validate the model directly. However, most of the articles reviewed indirectly test the model by using statistical analysis in which they estimate the average correlation among HR practices in bundles by using a Cronbach's alpha. Those studies provide examples of HR practices as well as different measures of performance. Also, the studies that do not provide a statistical analysis, they nonetheless give an idea of how authors understood the HR practices-performance linkage.

Concerning the country in which the investigation is performed, we expected to find out studies conducted mainly in north American and European countries, particularly in Anglo-Saxon countries such as the United States and the United Kingdom. Surprisingly, our systematic review



contains studies from more than 20 countries on almost every continent. We consider that this information is remarkable because it might reduce bias caused by the country-of-origin factor (e.g., labour regulations). Many of the studies were conducted in European countries (27), distributed as follows: UK (7), The Netherlands (6), Denmark (3), Ireland (2), Romania (1), Luxemburg (1), Sweden (1), Belgium (1), Italy (1), Greece (1), Croatia (1), and Germany (1). However, other studies were conducted within the Asian context (12) (China-3, Korea-4, India-1, Taiwan-1, Hong Kong-1, Jordania-1, and Turkey-1). We also found studies performed in the United States (5), New Zealand (1), Uruguay (1) and Australia (1). Finally, some studies collect data from several countries, for instance (Japan, Brazil, China, Mexico, USA, Spain, India, UK, South Africa, Netherlands, Botswana) (Bal & De Lange, 2015), and (Italy, Germany, UK, Poland, Spain, France) (Guerci et al., 2015).

Regarding the data-gathering tools, our review protocol shows that information is usually collected through surveys or questionnaires. Questionnaires include a planned set of question to be submitted to many persons. Questionnaires and surveys are commonly used in studies with many respondents because they present several advantages. First, they involve lower cost than interviews, because there is no need to train and send interviewers to the workplace. Also, the uniformity of questions provides data that is easy to gather, process and extract conclusions from it. However, these data-gathering tools also present some disadvantages. First, it is hard to assess respondent's motivation, which can affect the validity of the response. Moreover, it is difficult to control the returning rate, which may represent biased samples. The most common type of questionnaire along our review protocol is to prepare a set of questions related to the three dimensions of the AMO model, aiming to find out the employee or manager perceptions or assumptions concerning those practices. The HR practices are usually measured by using different scales, which assess whether these practices are present or not. As a matter of fact, the item "the organization evaluates my job performance based on objective and measurable results" can be measured with a 1-7 scale ("1 = absolutely disagree"; "7 = totally agree") (Ming et al., 2014).

However, we have also found some investigations using interviews (e.g. (Bello-Pintado, 2015; Claudia, 2015; Sterling & Boxall, 2013)). That is to say; a face-to-face methodology for obtaining reliable measures in the form of verbal responses. The advantages of interviews are the following: first, they enable the interviewer to clarify questions if needed. Also, allows the informants to clarify in greater detail the answers. Finally, it allows the interviewers to observe verbal and non-verbal behaviours. Along our review protocol, interviews are commonly used in studies with few respondents, especially for collecting information from managers. As a matter of fact, Bello-Pintado (2015), conducted a set of interviews with plant managers of Uruguayan manufacturing firms. Also, other authors used this methodology to collect data from HR managers (Ruzic, 2015), or even front-line workers (Sterling & Boxall, 2013).

According to our searching protocol, most empirical works are based on cross-sectional data. Those studies involve the use of regression analyses at a given point in time, with the aim of determining the causal effects of HR practices (independent variable) and performance (dependent variable). Concerning the sample survey, it is typically collected at different organizational levels to obtain a variety of perspective (multilevel analysis). The aim is

minimizing bias caused by factors such as only consider the manager's voice. Also, many of the studies gather data across different industry sectors, enabling generalization of findings (Alagaraja, 2012). As a matter of fact, Kroon et al. (2013) investigated among Dutch local small firms collecting data from both the service sector and the construction industry. In the same vein, Obeidat et al. (2010) gathered data from Jordanian manufacturing and financial sectors. Also, Innocenti et al. (2011) took into consideration a diverse sample, including Italian companies from distribution, marketing, consultancy, and production. Moreover, Choi (2014) included in their investigation a survey sample of 454 South Korean firms, representing manufacturing, non-financial services, and financial services industries.

The use of cross-sectional studies is useful for determining correlations among independent and dependent variables. However, some authors have criticized that such studies are not able to establish causal relationships (Shih et al., 2007), and (Gerhart, 2007; Wall and Wood; 2005) cited in Knies & Leisink (2014). In fact, it might be important to measure the effect of high-performance work systems after a certain time span since its implementation. Nevertheless, other authors point out that this fact must not prevent companies from investing in HPWS (Huselid, 1994) quoted in Shih et al. (2007). Longitudinal studies involve a survey of the same population over a period and are mainly conducted to detect changes in attitudes, feelings, or results. That is to say; those studies might be able to determine causality. However, the use of longitudinal studies is a costly and complicated task because it means to measure more times on equal terms. For this reason, some authors point out that fewer longitudinal studies investigated the relationship between HRM and performance (Alagaraja, 2012). In fact, we only found six articles within our review protocol conducting entirely or partially a longitudinal research (Bal & De Lange, 2015; Block & Pickl, 2014; M. Choi & Yoon, 2015; Demortier et al., 2014; Knies & Leisink, 2014; Shih et al., 2007).

Another concern detected in our results is the large variety of methodologies through investigations. Different data produce different results (Wright, Gardner, Moynihan, & Allen, 2005) cited in Alagaraja (2012), and the large variety of HR practices and measures of performance (e.g., productivity, employee commitment) used through investigations make it difficult to state firm conclusions. Moreover, scholars have used a wide variety of control variables, ranging from industry-level controls (e.g., technology, market conditions), to organization-level controls (e.g., size, firm, economic activity), and to individual level control (e.g., age, gender, the level of education). This lack of consensus is evident throughout the articles reviewed and, therefore, it is hard to identify how HR practices should be measured (e.g., index, scales) (Harney & Jordan, 2008)

#### **4.4. What HIW practices have been used to analyse the AMO framework?**

As we pointed out in the introduction, the variety of practices across investigations makes it difficult to state conclusions about which bundle of practices (if any) better fit for exploring the HRM practices-performance linkage. In this regard, it is essential to underline the existence of two opposite points of view. On the one hand, the universalist perspective states that effective contribution of an HRM system to one organization can be spread to other organizations,

without taking into account the particular context (Pfeffer, 1995; Huselid, 1995) cited in (Ruzic, 2015; Schimansky, 2014). Thus, this approach considers that some HRM activities are always better than others (Ruzic, 2015). In fact, some authors point out the existence of a "core high-performance work systems", which aim to provide employees with the proper abilities to perform, the means to do their jobs, and the motivation needed (Shih et al., 2007). Practices related to those systems are selection and training programs, information sharing and worker involvement, and incentive arrangements that provide motivation (Marín-García & Conci, 2013; Shih et al., 2007). On the other hand, the contingency approach emphasizes that optimal HRM systems must be adapted to particular circumstances and be consistent within the organization (Ehrnrooth & Björkman, 2012) and (Delery and Doty, 1996; Hoque, 1999) quoted in Ruzic (2015). As a matter of fact, some authors point out that industries require different skills and knowledge (Schimansky, 2014). Moreover, some scholars state that choosing the right combination of practices is crucial to better performance, and similar bundles may be negatively related to positive outcomes depending on the context (Godard, 2001) cited in Shih et al. (2007).

In any case, there are several HRM practices that commonly appear in many investigations. The four most frequently considered in many "bundles" are recruitment and selection, training and development, reward schemes, and performance management (Boselie et al., 2005). Some authors suggest the appropriateness of conceptualizing HRM systems into the AMO dimensions. That is to say, grouping them as ability, motivation or opportunity-enhancing practices (Claudia, 2015; Jiang, Lepak, Hu, et al., 2012). In this sense, Appelbaum et al. (2000) offered several examples of HR practices for ability (e.g. formal and informal training), motivation (e.g. job security, promotion opportunities), and opportunity to participate (e.g. autonomy, communication) (Claudia, 2015).

In light of this, we thought it opportune to analyse the HRM practices collected across our review protocol according to the three AMO dimensions, as we explain below.

Ability can be defined as an acquired or natural capacity that enables an individual to perform a particular task successfully (Rothschild, 1999) cited in Kim et al. (2015). Moreover, ability refers to human attributes (skills, experience, attitudes, prior related knowledge) that are relevant for the accomplishment of those tasks (Boon et al., 2014; Minbaeva, 2013). In HRM context, ability refers to the set of practices designed for ensuring that the employees have the resources needed for performing their tasks (Sarikwal et al., 2013). Hence, those practices focus on increasing the knowledge, skills, and abilities (KSA) at both individual and collective levels (Subramony, 2009) cited in Demortier et al. (2014).

According to our searching protocol, many authors agree that examples of ability-enhancing practices are primarily related to training and career, and recruitment and selection. Training and development practices improve the chances of developing new abilities (Bos-Nehles et al., 2013; Schimansky, 2014), as well as to understand problems and discover new opportunities, whereas recruitment and selection deals with attracting and choosing individuals who conform to the profile and the organization (Schimansky, 2014).

Table 4: Ability-enhancing practices retrieved from the Review protocol

AMO Dimension	HR practices	Research Articles
Ability (A)	Training and Development	(An, 2009; C. Armstrong et al., 2010; Bainbridge, 2015; Bello-Pintado, 2015; Block & Pickl, 2014; Boon et al., 2014; Boselie, 2010; Boselie et al., 2005; J.-H. Choi, 2014; M. Choi & Yoon, 2015; Claudia, 2015; Demortier et al., 2014; Drummond & Stone, 2007; Ehrnrooth & Björkman, 2012; Fu et al., 2013; Ganli et al., 2014; Gould-Williams & Gatenby, 2010; Guerci et al., 2015; Harney & Jordan, 2008; Innocenti et al., 2011; Jiang, Lepak, Hu, et al., 2012; Katou & Budhwar, 2010; Knies & Leisink, 2014; Kroon et al., 2013; Ming et al., 2014; Munteanu, 2014; Obeidat et al., 2010; Raidén et al., 2006; Ramsay et al., 2000; Renwick et al., 2012; Ruzic, 2015; Sarikwal et al., 2013; Schimansky, 2014; Shih et al., 2007; S. J. Shin et al., 2016; Sterling & Boxall, 2013; Tuuli & Rowlinson, 2009; Vermeeren et al., 2014; Wood et al., 2015)
	Recruitment and Selection	(C. Armstrong et al., 2010; Bello-Pintado, 2015; Boselie et al., 2005; Ehrnrooth & Björkman, 2012; Fu et al., 2013; Ganli et al., 2014; Guerci et al., 2015; Harney & Jordan, 2008; Jiang, Lepak, Hu, et al., 2012; Katou & Budhwar, 2010; Ming et al., 2014; Obeidat et al., 2010; Raidén et al., 2006; Ramsay et al., 2000; Renwick et al., 2012; Ruzic, 2015; Sarikwal et al., 2013; Schimansky, 2014; Shih et al., 2007; Vermeeren et al., 2014)
	Performance Evaluation	(An, 2009; Boselie et al., 2005; J.-H. Choi, 2014; Claudia, 2015; Drummond & Stone, 2007; Ehrnrooth & Björkman, 2012; Fu et al., 2013; Innocenti et al., 2011; Katou & Budhwar, 2010; Knies & Leisink, 2014; Sarikwal et al., 2013; Wood et al., 2015)

Motivation can be defined as “the degree to which an individual wants and chooses to engage in certain specified behaviours” (Mitchell, 1982; Katz & Allen, 1982) quoted in Kim et al. (2015). Motivation can be either extrinsic or intrinsic (Marín-García & De Miguel, 2001; Minbaeva, 2013; Sarikwal et al., 2013). External factors are related to incentives such as economic rewards and usually leads to focus on short-term gains, whereas intrinsic factors emanate from individual's interests and values, for instance when a person find a job satisfying and pleasant (Minbaeva, 2013; Schimansky, 2014). Intrinsic motivation is usually linked with employee's long-term commitment (Schimansky, 2014). However, some authors point out that, sometimes, a lack of extrinsic factors can affect the intrinsic motivation (Bos-Nehles et al., 2013). Also, motivation can also be affected by employee’s ability because employees with lack of skill may become demotivated if they consider that the task is too difficult (Siemsen et al., 2008) cited in Bos-Nehles et al. (2013). In HRM context, motivation-enhancing practices foster employee's efforts for accomplishing the objectives and deliver high levels of performance (Kinnie et al., 2006; Subramony, 2009) quoted in Demortier et al. (2014). Therefore, motivation bundle comprises practices such as performance appraisal usually linked to financial or non-financial incentives (Demortier et al., 2014).

According to our review protocol, the most common motivation-enhancing practices are related to performance appraisal and extrinsic incentives. As a matter of fact, pay for performance is used in many investigations, both at the individual or at the group level. However, we also found in many studies non-economic forms of motivation, such as recognition, job security, internal promotion (or career development), social activities, and work-life balance opportunities. In contrast, we did not find many examples practices focusing on intrinsic motivation. Some of the few examples we found are motivation to learn, personal or team satisfaction, willingness to perform, corporate sense, and collaborative climate.

Table 5: Motivation-enhancing practices retrieved from the Review protocol

AMO Dimension	HR practices	Research Articles
<b>Motivation (M) (Extrinsic)</b>	Performance Appraisal	(C. Armstrong et al., 2010; Bello-Pintado, 2015; Boon et al., 2014; Gould-Williams & Gatenby, 2010; Jiang, Lepak, Hu, et al., 2012; Ming et al., 2014; Obeidat et al., 2010; Ramsay et al., 2000; Vermeeren, 2010)
	Extrinsic Incentives	(An, 2009; Bainbridge, 2015; Block & Pickl, 2014; Boon et al., 2014; Ehrnrooth & Björkman, 2012; Innocenti et al., 2011; Jiang, Lepak, Hu, et al., 2012; Katou & Budhwar, 2010)
	Pay for Performance (Individual)	(J.-H. Choi, 2014; Demortier et al., 2014; Fu et al., 2013; Ganli et al., 2014; Ramsay et al., 2000; Sarikwal et al., 2013; Wood et al., 2015)
	Pay for Performance (Group level)	(C. Armstrong et al., 2010; Bello-Pintado, 2015; Demortier et al., 2014; Ganli et al., 2014; Ming et al., 2014; Wood et al., 2015)
	Recognition	(Bainbridge, 2015; Block & Pickl, 2014; Claudia, 2015; Innocenti et al., 2011)
	Job Security	(Bello-Pintado, 2015; Boselie et al., 2005; Jiang, Lepak, Hu, et al., 2012; Raidén et al., 2006; Sarikwal et al., 2013)
	Internal Promotion	(Bello-Pintado, 2015; Boselie et al., 2005; Ganli et al., 2014; Katou & Budhwar, 2010; Kroon et al., 2013; Raidén et al., 2006; Sarikwal et al., 2013; Wood et al., 2015)
	Social Activities	(Boselie et al., 2005; Harney & Jordan, 2008)
	Work-life Balance Opportunities	(Boselie et al., 2005; Knies & Leisink, 2014; Munteanu, 2014; Raidén et al., 2006; Sarikwal et al., 2013; Wood et al., 2015).
<b>Motivation (M) (Intrinsic)</b>	Motivation to Learn	(Sterling & Boxall, 2013)
	Personal or Team Satisfaction	(Block & Pickl, 2014; Drummond & Stone, 2007; Harney & Jordan, 2008; Tuuli & Rowlinson, 2009)
	Willingness to Perform	(Bos-Nehles et al., 2013)
	Corporate Sense	(Demortier et al., 2014)
	Collaborative Climate	(Kim et al., 2015)

Opportunity can be defined as a set of circumstances that makes it possible to do something. Employees' opportunity to participate has several dimensions, such as involvement in the decision-making process, knowledge sharing, horizontal communication, and job enrichment (Boselie, 2010) cited in Schimansky (2014). Organizations willing to foster participation should provide the means to improve those dimensions, by decreasing the distance between employees and management. That is to say, in this context opportunity is linked to employee involvement in the decision-making process (Appelbaum et al., 2000). Hence, firms must provide opportunities for dialogue across organizational hierarchies, creating systems for capturing and sharing knowledge within the organization (Argyris & Schön, 1996; Senge, 1990) quoted in Minbaeva (2013). Also, the decision-making process should be decentralized and, consequently, employees will enjoy a higher level of autonomy for performing their tasks (Marín-García & De Miguel, 2001; Sarikwal et al., 2013). In HRM context, opportunity-enhancing practices are designed for delegating the decision-making authority and fostering employee voice (Demortier et al., 2014). Thus, participation is seen as an opportunity for employees to be involved (Marín-García & De Miguel, 2001; Schimansky, 2014). Likewise, based on organizational support theory (Rhoades & Eisenberger, 2002) cited in Boon et al. (2014), signals that the organization invests in supportive activities may lead to improving the employee sense of belongingness and reducing stress, absence and turnover rates (Boon et al., 2014).

According to our searching protocol, the opportunity-enhancing practices may be grouped in four principal bundles: employee-involvement practices, knowledge-sharing practices, job design practices and autonomy-enhancing practices.

Employee-involvement practices include quality circles, self-directed work teams, problem-solving teams, team working, and those practices fostering flat hierarchies and involvement in the decision-making process. The aim of knowledge-sharing practices is providing enough information about important issues within the organization (performance, financial, operating, or strategic information). Also, those practices also aim to guarantee communication between employees and management. According to our results, many authors agree that both information sharing and communication are essential for improving the opportunity-enhancing dimension. In addition, many authors also consider as important those practices designed to foster employee voice, such as suggestions systems, complaint systems or surveys in place. Job design practices include appropriate job description (practices, procedures and workplace design), support from HR professionals, job rotation, level of internationalization and providing favorable work conditions. Finally, autonomy-enhancing practices are designed to decentralize the decision-making process and provide employees autonomy in their workplace. Also, those practices are also related to both irregular and regular flexibility.

Table 6: Opportunity-enhancing practices retrieved from the Review protocol

AMO Dimension	HR practices	Research Articles
<b>Opportunity (O) (Employee involvement)</b>	Quality Circles	(C. Armstrong et al., 2010; J.-H. Choi, 2014; Fu et al., 2013; Ramsay et al., 2000)
	Self-directed Work Teams	(An, 2009; C. Armstrong et al., 2010; Fu et al., 2013; Ramsay et al., 2000; Sterling & Boxall, 2013)
	Problem-Solving Teams	(C. Armstrong et al., 2010; J.-H. Choi, 2014; Drummond & Stone, 2007; Fu et al., 2013; Ramsay et al., 2000; Wood et al., 2015)
	Team Working	(Boon et al., 2014; Boselie et al., 2005; Drummond & Stone, 2007; Gould-Williams & Gatenby, 2010; Harney & Jordan, 2008; Jiang, Lepak, Hu, et al., 2012; Kroon et al., 2013; Munteanu, 2014; Raidén et al., 2006; Sarikwal et al., 2013)
	Involvement in the Decision-making Process	(Boselie, 2010; Boselie et al., 2005; Ehrnrooth & Björkman, 2012; Gould-Williams & Gatenby, 2010; Guerci et al., 2015; Harney & Jordan, 2008; Jiang, Lepak, Hu, et al., 2012; Katou & Budhwar, 2010; Munteanu, 2014; Raidén et al., 2006; Renwick et al., 2012; Sarikwal et al., 2013)
<b>Opportunity (O) (Knowledge - Sharing)</b>	Information Sharing and Communication	(An, 2009; C. Armstrong et al., 2010; Bello-Pintado, 2015; Block & Pickl, 2014; Boselie et al., 2005; J.-H. Choi, 2014; Drummond & Stone, 2007; Ehrnrooth & Björkman, 2012; Fu et al., 2013; Harney & Jordan, 2008; Jiang, Lepak, Hu, et al., 2012; Katou & Budhwar, 2010; Ming et al., 2014; Raidén et al., 2006; Shih et al., 2007; S. J. Shin et al., 2016)
	Suggestions Systems, Complaint Systems or Surveys in Place	(Boselie et al., 2005; J.-H. Choi, 2014; Ganli et al., 2014; Guerci et al., 2015; Innocenti et al., 2011; Jiang, Lepak, Hu, et al., 2012; Ramsay et al., 2000; Wood et al., 2015)
<b>Opportunity (O) (Job Design)</b>	Job Description	(Bainbridge, 2015; Block & Pickl, 2014; Boon et al., 2014; Bos-Nehles et al., 2013; Boselie et al., 2005; Fu et al., 2013; Guerci et al., 2015; Harney & Jordan, 2008; Innocenti et al., 2011; Jiang, Lepak, Hu, et al., 2012; Katou & Budhwar, 2010; Knies & Leisink, 2014; S. J. Shin et al., 2016),
	Support from HR Professionals	(Bos-Nehles et al., 2013; M. Choi & Yoon, 2015; Renwick et al., 2012; Schimansky, 2014)
	Job Rotation	(Boselie, 2010; J.-H. Choi, 2014; Katou & Budhwar, 2010; S. J. Shin et al., 2016)
	Level of Internationalization	(Kim et al., 2015)
	Favourable Work Conditions	(Block & Pickl, 2014)
<b>Opportunity (O) (Autonomy-enhancing)</b>	Autonomy	(Bello-Pintado, 2015; Boselie, 2010; Boselie et al., 2005; Drummond & Stone, 2007; Ehrnrooth & Björkman, 2012; Knies & Leisink, 2014; Kroon et al., 2013; Ming et al., 2014; Sarikwal et al., 2013; Vermeeren, 2010)
	Irregular and Regular Flexibility	(Bal & De Lange, 2015; Claudia, 2015; Drummond & Stone, 2007; Wood et al., 2015)

#### **4.5. How have been measured the model effectiveness in AMO research?**

Similarly to the previous point, there is a broad range of performance measures across investigations. Hence, organizational performance becomes a very diffuse term, as it can be conceived from different approaches (An, 2009). Indeed, there is no consensus about which criteria should be used to assess HRM effectiveness (Bos-Nehles et al., 2013). Consequently, some authors argue that the term "outcomes" reflect better the wide range of dependent variables used across investigations (Guest, 1997) cited in Boselie et al. (2005)

Some authors point out that measures of performance should be related to financial outcomes (e.g., profits, market share, sales growth), because they are the best indicators of organizational success (Ichniowski et al., 1996) cited in Boselie et al. (2005). However, other scholars consider that the use of more "proximal" outcome indicators (such as organizational and HR-related outcomes) is more appropriate for engaging workforce (Guest, 1997) quoted in (Boselie et al., 2005; Claudia, 2015). As a result, some investigations have measured performance through organizational outcomes, such as productivity, product or service quality, or efficiency. The main problem concerning those outcomes is the difficulty in standardizing the measures of them (Boselie et al., 2005).

Also, other studies have considered HR-related outcomes, such as employee commitment, job satisfaction, creativity intention to quit, trust in management, and absenteeism. They argue that employees are often the most suitable people to make decisions concerning their work. Therefore, it is important to measure the effects of HPWS on these employee outcomes (Drummond & Stone, 2007). In this vein, work performance theory (Cummings & Schwab, 1973) cited in Bos-Nehles et al. (2013) defines performance as individual behaviour associated with the accomplishment of expected role requirements (Bos-Nehles et al., 2013).

Similarly, other investigations consider that HR-related outcomes are in fact mediating variables between HRM and operational performance (Ramsay et al., 2000) and (Paauwe, 2004; Lepak et al., 2006) cited in Katou & Budhwar (2010). It is important to underline that employee performance usually depends on the perception of the HRM content. That is to say; it is important to ensure that practices are perceived as meaningful for achieving personal and organization goals (Ehrnrooth & Björkman, 2012). In this sense, it is essential to guarantee that practices are consistent with the business strategy. In such a way, practices are more likely to engage employees toward the organization objectives. In relation to HR-related outcomes, it is interesting to note the concept "Organization Citizenship Behaviour" (OCB). This term is defined as individual behavior that is discretionary, that is to say, goes beyond the basic requirements, without being explicitly recognized by the formal reward systems (Organ, 1988) cited in Sarikwal et al. (2013).

Concerning the efficacy of HPWS, many empirical investigations have shown a positive association between the adoption of high-performance work practices and different indicators of organization outcomes (Kaufman, 2015; Obeidat et al., 2010). However, there is no consensus among scholars and, indeed, some of them have suggested that such positive effect remains unclear (Claudia, 2015). In this sense, it is important to point out that most of the investigations

have focused on organizational-level analysis, while little attention has been paid to the individual employee (Guest, 1999) cited in Boselie (2010). According to our review protocol, the measures of performance may be grouped in three principal bundles: Financial outcomes, operational outcomes, and HR outcomes.

Table 7: Performance Outcomes

Bundle	Measures	Research Articles
<b>Financial Outcomes</b>	Market Share	(Alagaraja, 2012; Fu et al., 2013; Jiang, Lepak, Han, et al., 2012; Munteanu, 2014)
	Profitability	(Alagaraja, 2012; Boselie et al., 2005; Fu et al., 2013; Kaufman, 2015; Kim et al., 2015; Obeidat et al., 2010; Ramsay et al., 2000; Shih et al., 2007)
	Return on Assets (ROA)	(Alagaraja, 2012; J.-H. Choi, 2014; M. Choi & Yoon, 2015; Jiang, Lepak, Hu, et al., 2012; Obeidat et al., 2010; Ruzic, 2015)
	Sales Growth	(Alagaraja, 2012; Drummond & Stone, 2007; Fu et al., 2013; Jiang, Lepak, Hu, et al., 2012; Kaufman, 2015; Obeidat et al., 2010)
<b>Operational Outcomes</b>	Job Performance	(Bal & De Lange, 2015; M. Choi & Yoon, 2015; Demortier et al., 2014; Ehrnrooth & Björkman, 2012; Gould-Williams & Gatenby, 2010; Jiang, Lepak, Hu, et al., 2012)
	Productivity/ Efficiency	(Alagaraja, 2012; C. Armstrong et al., 2010; Bello-Pintado, 2015; Boselie et al., 2005; Jiang, Lepak, Hu, et al., 2012; Katou & Budhwar, 2010; Kim et al., 2015; Obeidat et al., 2010; Raidén et al., 2006; Ramsay et al., 2000; Vermeeren et al., 2014)
	Product/ Service Quality	(Alagaraja, 2012; Bello-Pintado, 2015; Boselie et al., 2005; Fu et al., 2013; Jiang, Lepak, Hu, et al., 2012; Katou & Budhwar, 2010; Ramsay et al., 2000; Sterling & Boxall, 2013)
	HRM effectiveness	(Bainbridge, 2015; Bos-Nehles et al., 2013; Gilbert et al., 2015; Harney & Jordan, 2008; Shih et al., 2007)
	Customer Satisfaction	(Alagaraja, 2012; Hughes, 2007; Katou & Budhwar, 2010)
<b>HR Outcomes</b>	Turnover Intention	(Alagaraja, 2012; C. Armstrong et al., 2010; Boselie et al., 2005; Gould-Williams & Gatenby, 2010; Jiang, Lepak, Hu, et al., 2012; Ramsay et al., 2000; Sarikwal et al., 2013)
	Trust in Management	(Bainbridge, 2015; Boselie et al., 2005; Harney & Jordan, 2008)
	Job Satisfaction	(Boon et al., 2014; Boselie et al., 2005; M. Choi & Yoon, 2015; Claudia, 2015; Drummond & Stone, 2007; Fu et al., 2013; Ganli et al., 2014; Gould-Williams & Gatenby, 2010; Innocenti et al., 2011; Jiang, Lepak, Hu, et al., 2012; Ming et al., 2014; Vermeeren et al., 2014)
	Organization Citizenship Behaviour (OCB)	(Boselie, 2010; Boselie et al., 2005; Harney & Jordan, 2008; Jiang, Lepak, Hu, et al., 2012)
	Absenteeism	(Boselie et al., 2005; Ramsay et al., 2000; Sarikwal et al., 2013; Sterling & Boxall, 2013)
	Innovative Behaviour	(C. Armstrong et al., 2010; Ehrnrooth & Björkman, 2012; Jiang, Lepak, Hu, et al., 2012; Katou & Budhwar, 2010; Schimansky, 2014; S. J. Shin et al., 2016)
	Employee commitment	(Bal & De Lange, 2015; Block & Pickl, 2014; Boselie, 2010; Boselie et al., 2005; Ganli et al., 2014; Gould-Williams & Gatenby, 2010; Harney & Jordan, 2008; Innocenti et al., 2011; Jiang, Lepak, Hu, et al., 2012; Ming et al., 2014; Raidén et al., 2006; Renwick et al., 2012; Ruzic, 2015; S. J. Shin et al., 2016; Tuuli & Rowlinson, 2009)
	Extra-effort	(Boon et al., 2014; Knies & Leisink, 2014)
	Organizational climate	(Guerci et al., 2015; Jiang, Lepak, Hu, et al., 2012)
Employee retention	(Alagaraja, 2012; Drummond & Stone, 2007)	

#### 4.6. Is the AMO framework a summative or a multiplicative model?

Scholars have considered the AMO framework from three different perspectives: multiplicative, summative, and combinative. By now, they have not reached an agreement to determine which of these perspectives better explains the interaction between ability, motivation, and opportunity dimensions. Indeed, it is possible that AMO dimensions combine differently



depending on the level of analysis (Kim et al., 2015). Moreover, some authors maintain that the exact relationship between the three AMO dimensions remains so far unknown (Boxall and Purcell, 2011), cited in Knies & Leisink (2014). Similarly, other authors point out that either the model has never fully empirically tested (Aryee et al., 2013; Messersmith et al., 2011) cited in Demortier et al. (2014) or the three dimensions have been only independently empirically validated (Demortier et al., 2014).

On the one hand, some authors point out that it is a multiplicative model. That is to say, abilities, opportunities, and motivation must all be present (at least to some degree), and the lack of any of them implies that performance becomes unfeasible (Siemsen et al., 2008) and (Blumberg & Pringle, 1982; Vroom, 1964; Delery, 1998) cited in (Bos-Nehles et al., 2013; Ozcelik & Uyargil, 2015). Moreover, each of the three dimensions reinforces the other two and, therefore, low levels in one dimension will lead to poor firm performance (Kim et al., 2015). In the extreme situation of one factor being absent, then performance becomes zero (Charles et al., 1986; Ozcelik & Uyargil, 2015). This model is usually known as interactive (or complementary) model, and may be reflected by the function:  $P = f(A \times M \times O)$  (Bos-Nehles et al., 2013) and (Reinholt, Pedersen, & Foss, 2011) cited in Kim et al. (2015).

Some scholars argue that there is a lack of research confirming the multiplicative perspective (Obeidat et al., 2010), or even consider that it has never been empirically demonstrated (Siemsen et al., 2008) cited in Bos-Nehles et al. (2013). In fact, we only found four articles within our review protocol testing the multiplicative hypothesis.

Kim et al. (2015) investigated in the Korean firm context, considering cross-cultural competences as Abilities, collaborative climate as Motivation, and firm level of internationalization as Opportunity. They tested three different AMO models and found that companies perform better, and employees are more willing to share their expertise when they grant a highly supportive climate and provide adequate internationalization levels to their staff to develop their professional skills. On the contrary, high global competence employees may become frustrated in environments that do not provide enough internationalization opportunities, leading to poor firm performance.

In the same vein, Obeidat et al. (2010) conducted research for providing empirical verification of the AMO model. In fact, they postulated that the three-factor model was better than a one or two-factor model for explaining the link between human resources practices dimensions and performance indicators. This hypothesis was validated in the study, providing empirical verification of the multiplicative model.

Also, Bello-Pintado (2015) developed a theoretical model for explaining how the interaction between bundles of HRM practices may affect performance outcomes in the Uruguayan Manufacturing industry context. As a result, they explored the three-interaction model ( $A \times M \times O$ ). In addition, due to the complexity of studying the interaction between many practices, they decided to study two-way interactions as well (i.e., motivation and ability practices). Contrary to their expectations, they concluded that only the motivation-enhancing bundle had a considerable effect on performance. Moreover, their findings revealed synergistic effects of two-way interactions, but generally with the presence of motivation-enhancing practices. That

is to say, performance may be reflected by the functions:  $P = (M \times O)$  and  $P = (M \times A)$ . Concerning the three-way interaction, they concluded that performance does not improve with a third bundle of HRM practices. That is to say; they did not find a synergistic relationship among ability, motivation, and opportunity-enhancing practices.

Similarly, Gould-Williams & Gatenby (2010) investigated to evaluate the effects of teamwork and organizational context on the performance outcomes of British public workers. Specifically, they tested whether the interaction effect of bundles of practices on organizational performance was greater than the individual effects. They used training and development activities as ability-enhancing practices (A), performance-reward activities and performance appraisals as motivation-enhancing practices (M), and team working and high-involvement climate as opportunity-enhancing practices (O). Also, they considered commitment, job satisfaction and intention to quit, among other, as organizational performance indicators. Although they used a multiplicative model, it was based on two-way interaction so we cannot, therefore, consider the study as valid for testing the multiplicative model. Moreover, the interactive effects were non-significant to demonstrate positive effects in their statistical analysis.

On the other hand, some scholars consider that performance is better described by an additive function of the form  $P = f(A + M + O)$  (Boxall and Purcell, 2003) cited in Bos-Nehles et al. (2013). In such a way, the level of performance could increase by fostering independently any AMO dimension, and low levels in one or even two dimensions can be compensated by higher levels in the others (Kim et al., 2015). Moreover, other authors propose that each dimension of the AMO model is aimed at different goals and, therefore, it could be possible to find organizations in which only ability, motivation or opportunity-enhancing practices are taken into consideration (Toh et al. 2008) cited in Kroon et al. (2013). As a matter of fact, a study conducted by Knies & Leising show that ability and motivation-enhancing practices have a direct effect on the behavior, whereas opportunity-enhancing practices have an indirect effect through commitment (Knies & Leisink, 2014). We argue, however, that initial minimal levels of each dimension are needed for improving performance. As a matter of fact, a motivated employee is not likely to perform better if does not have the minimum abilities for developing the task.

In our review protocol, most of those studies that provide a statistical analysis for measuring the HR practices-performance linkage follow a summative model. They usually consider separate HR practices according to each of the three dimensions, for measuring performance independently.

As a matter of fact, Boselie (2010) investigated in a Dutch hospital, with the aim of studying the effects of HPW practices on both citizenship behaviour and commitment. Their hypotheses aimed to find out whether high scores on perceived HPWPs that either enhance abilities (e.g., training), motivation (e.g., pay for performance), or opportunities to participate (e.g., autonomy), were positively related to the above measures of performance. In fact, their findings showed that although abilities and opportunity-enhancing practices were related to high affective commitment, motivation-enhancing practices did not appear to make a significant contribution.

In the same vein, Ganli et al. (2014), conducted a study within the Chinese context to determine the impact of HPWS to job satisfaction, commitment, and empowerment. As in the example above, they examined the effect of every dimension separately to each of the measures of performance. Their results, in this case, indicated for example that motivation and opportunity were positively associated with job satisfaction, but they did not find enough evidence concerning ability-enhancing practices.

Furthermore, Jiang et al. (2012), developed a meta-analysis for examining the effect of the three dimensions on proximal (e.g., motivation) and distal (e.g., financial outcomes) organizational outcomes. Their conclusions showed for example that ability-enhancing practices were less positively related to employee motivation than the other two dimensions.

Likewise, other authors followed the same approach in different contexts. Either to examine the impact of these practices on organizational climate (Guerci et al., 2015), and job satisfaction (Ming et al., 2014), or for exploring the mediating effect of these practices between empowerment and performance behaviours (Tuuli & Rowlinson, 2009).

Similarly, our review protocol reveals that other authors have selected practices from the three dimensions to build a unitary bundle (e.g. (C. Armstrong et al., 2010; Bainbridge, 2015; Bal & De Lange, 2015; J.-H. Choi, 2014; Sarikwal et al., 2013). However, although they test all the practices as a whole in their analysis, the individual effect of ability, motivation and opportunity on performance (as well as the interaction among them) remains unclear. That is to say; it is impossible to know if any of the dimensions present insufficient levels, or if performance is affected only by, for instance, motivation-enhancing practices. Moreover, they do not perform a statistical analysis in which a combinative approach is explicitly conducted. Therefore, we have classified those studies as either summative or undetermined.

Finally, other authors argue that some dimensions prevail over the others. Therefore, AMO model should be represented by combining additive and multiplicative model (combinative approach). That is to say; there are factors that directly influence performance, while others only moderate them by increasing or decreasing the effects. Although we did not find many examples of the combinative perspective in our review protocol, it is interesting to point them out for analysing the AMO model in a comprehensive manner.

As a matter of fact, Bos-Nehles et al. (2013) consider that ability is an indispensable requirement for ensuring performance. Motivation and opportunity, on the other hand, are also important, but they cannot directly influence performance when the necessary abilities are not guaranteed. As a result, they believe that AMO framework is better described by the function  $P = f(A(1+M+O))$ . To support their hypotheses, they applied the AMO theory to study its effect on line's manager performance. Their results showed that performance was better explained by the function  $P = f(A(1 + O))$ , that is to say, motivation effect was not significant or even negatively related to performance (Bos-Nehles et al., 2013).

Similarly, other authors consider that motivation is the dimension that has a direct effect on performance (here behaviour), whereas both ability and opportunity moderate the motivation effect (Hughes, 2007). In the same vein, other authors suggest that ability and motivation have a direct impact on performance, and the opportunity to perform moderates the motivation

effect (Knies & Leisink, 2014). Also in the same vein, Kim et al. (2015) consider that opportunity and motivation dimensions alone are not likely to have a significant effect on performance. However, as we explained above, their investigation within the Korean context supported the three-way multiplicative approach.

As commented before, other authors have found synergistic effects on two-way interactions (Bello-Pintado, 2015; Gould-Williams & Gatenby, 2010). Hence, we consider that these analyses are more related to the combinative model than the multiplicative one.

## **5. Conclusions**

High-performance work systems are supposed to affect organization performance positively. However, there is not a consensus for explaining how these systems work and, indeed, many investigations have been conducted to clarify this issue. Since its emergence, the AMO framework has been widely accepted for explaining the HRM-performance linkage, and most of the articles related to the topic mention it in their theoretical framework section. The model suggests that employees perform well when they have the necessary abilities, the adequate motivation, and their employers provide opportunities to participate.

Appelbaum et al. (2000) originally developed the model on the basis of a framework proposed by Bailey (1993). With the aim of verifying this model, the authors conducted multilevel research within three different industries operating in the United States context. Overall, they demonstrated that HPWS had a positive effect on various measures of organization performance in each industry and, hence, they validated the AMO framework. However, it remains unclear whether this model is useful for explaining the HRM-performance linkage in all contexts. Moreover, it seems that few researchers have tried to validate the model by following a single methodological approach.

The purpose of our study was to shed light on some aspects of the AMO framework within the HRM context. Specifically, we aimed to identify whether it is possible to confirm the model as it was originally proposed. As a result, we conducted a systematic literature review seeking to determine those studies testing the model in their empirical analysis. Likewise, we also aimed to find out which HR practices and measures of performance were considered across investigations, to define, if possible, a standard approach.

During the course of this review, we realized that few investigations had the explicit objective of verifying the AMO framework. We cannot say for sure that our review protocol collected all the studies related to the model. Still, it would surprise the existence of many more investigations related to the topic and, even so, we believe that the sample obtained represents as adequately as possible the current state of the art. Consequently, it appears to be a lack of research in this sense. However, most of the articles measured the relationship between HR practices and several measures of performance. That is to say; although those studies did not have the explicit objective of confirming the AMO framework, they indirectly tested it through empirical analysis, in which they used examples of ability, motivation, and opportunity-enhancing practices for exploring their influence over several outcomes.

The overall conclusion of our study is that accurately determine the effect of HRM over performance is a complex and challenging task. First, this linkage has been investigated from different approaches, by using a large variety of methodologies. As a matter of fact, scholars have used various performance measures, different control and contingent factors, and a wide range of human resources practices across investigations. As a result, although many studies confirm the positive effect of HPWS over performance, it becomes impossible to generalize on how a perfect model should be work in all contexts. Also, other mechanisms could either reinforce or complement the AMO model proposal. For instance, the contingent framework underlines the importance of contextual factors, whereas the social exchange theory emphasizes on the importance of the subjective perceptions of the employees when implementing HR practices. Besides, other approaches consider aspects such the role of line managers in the implementation process, the generational and cultural differences among employees or the firm's available resources for investing in HRM activities. On these grounds, we consider that although the AMO framework is a very useful tool for exploring the HRM-performance linkage, other factors must also be considered for defining a more comprehensive approach.

Second, most investigations in the HRM context are based on cross-sectional data, which is useful for determining the influence of HR practices over performance outcomes at a given point of time. Moreover, these studies usually collect data at different levels of the organization or even among different industry sectors, which provides a more comprehensive view and enables generalization of findings. However, few empirical works are using a longitudinal approach and, therefore, it is difficult to establish causal relationships resulting from the implementation of HPWS after a period. From our point of view, it is necessary to conduct more longitudinal analyses for comparing the primary measures with those obtained once HRM actions are implemented.

Third, the vast diversity of methodologies used across investigations involve the utilization of different data and, therefore, provides diverse results. On the one hand, this is a positive fact, because it enriches the model implementation and draws results from a wide range of contexts. However, on the contrary, this tendency of constantly develop new approaches makes it difficult to state firm conclusions concerning the validity of the model, which might result in a lack of scientific confirmation. For this reason, we believe that there is a need for greater consistency among investigations. That is to say; it is necessary to replicate studies within different contexts, for drawing more comparable and precise conclusions.

Finally, it seems that the AMO framework is far from being a static model. In fact, the model has evolved over successive investigations and scholars have pointed out potential improvements to it. As a result, it was difficult to find studies replicating the original investigation and, therefore, it is also difficult to know whether the model has been tested and validated as it was first conceived.

Concerning the model characteristics and implications, we also identified several concerns. On the one hand, the AMO framework proposes three broad dimensions for classifying human resources practices: ability, motivation, and opportunity. Nevertheless, we consider that the boundaries of these dimensions are often diffuse. As a matter of fact, motivation might be enhanced by using specific motivation-enhancing practices such as pay for performance or a

formal reward system. However, it can also be improved by challenging jobs, involvement in the decision-making process and information sharing, which are commonly classified as opportunity-enhancing practices. In the same way, skills and abilities might be ensured by formal training or proper recruitment practices, but they might also be enhanced by participative practices such as self-directed work teams, in which employees learn from their fellow workers. This fact reinforces the synergistic hypothesis related to HPWS and could better explain why summative approaches demonstrate positive effects by using solely one or two dimensions of the AMO model.

On the other hand, we expected to find out more studies testing the interactive approach of the AMO framework, due to the model is supposed to confirm the synergistic effects hypothesized by many scholars. In fact, the authors initially stated that "workers needed appropriate motivation to put forth discretionary effort, they needed to have the necessary skills to make their effort meaningful, and employers had to give them the opportunity to participate..." (Appelbaum et al., 2000), which appeared to support the interactive approach. Therefore, the lack of research testing the multiplicative perspective of the model is a surprising finding and might challenge most of the assumptions taken into account so far.

Finally, we believe that the AMO model is an excellent and structured framework that provides a better understanding of the relationship between HRM and performance. Moreover, the effectiveness of the model's proposal appears to be beyond doubt. In fact, a well-trained and skilled employee will perform better, and a motivated worker will be ready to "go the extra mile". Likewise, if the work environment does not provide adequate opportunities, both abilities and motivation might become meaningless. However, we consider that many other factors could influence the positive effects of HPWS. As a matter of fact, not only contextual factors, but also individual beliefs, personal affinities, or personal circumstances (among others) might affect the implementation of these practices and the subsequent outcomes. For this reason, we consider that developing an HRM model that perfectly fit any situation is a very complicated, if not impossible, task.

To sum up, we have tried to clarify several issues related to the AMO framework, by exploring investigations linked to the model to a greater or lesser extent. As we commented before, few studies explicitly test the model and, consequently, some of the assumptions remain unclear. Keeping this in mind, further empirical research could be linked to look for new studies that help us to understand better the model. One starting point could be the revision of the studies retrieved through our snowball strategy.

Also, further studies could be devoted to replicate within different contexts those investigations that have demonstrated positive results. By doing that, it could be possible to strengthen the conclusions obtained and take further steps for unlocking the so-called "black box" of human resource management.

Capítulo 3: Protocolo ¿De qué depende en grado de uso de los complementos salariales? Evidencias a partir de la encuesta de sueldos y salarios INE (estudio piloto EES 2006)





## **Protocolo ¿De qué depende el grado de uso de los complementos salariales? Evidencias a partir de la encuesta de sueldos y salarios INE (estudio piloto con datos de 2006)**

Martinez-Tomas, J., & Marin-Garcia, J. A. (2019). Protocol: What does the wage structure depend on? Evidence from the INE salary national survey (pilot study with 2006 data). WPOM-Working Papers on Operations Management, 10(1), 70.

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### **Abstract**

In previously published research, a great difference is observed concerning salary components that are used in different national contexts. In the present study, we will focus on the Spanish case by using data taken from the salary structure survey (ESS) conducted by the INE (Spanish National Statistical Organization). This protocol raises several research questions. Our main objective is to find out the incidence and degree of use of extrinsic motivation programs in the Spanish labour context. For that purpose, we propose a methodology to analyse the ESS, as well as to find out whether any research has been carried out in this regard. 2006's pilot analysis is being presented in this moment to illustrate step by step the method of analysis.

Our results show that both degree of use and intensity of the economic remuneration programs related to extrinsic motivation are low (e.g., in monthly payments, the most frequent component is fixed income supplements not related to shifts, which represent 75% of people from ESS2006. Then, we find variable supplements (29%) and fixed supplements related to shifts (15%). Regarding intensity, basic monthly salaries dominate by far as a major part of a salary (73%) while variable extraordinary payments (1.8%), supplements related to shifts (1%), extra hours (<1%) and payment in kind (<1 per thousand) represent a marginal amount of the total salary paid). On the other hand, our results also indicate the existence of several factors that may influence the presence of variable complements (sectoral differences, market scope, organization size, educational level, or labour agreement).

As additional contribution to our work, the present study allows us to know whether the sample collected by academic research is representative or not, since the incidence and extend of use of the economic participation programme should lead to similar results to those provided by the INE. On the other hand, we can identify those adjustment variables that influence in the salary distribution composition. All work done so far allows us to confirm that the research hypotheses are, at least, relevant because they have not been answered up in the literature published to date.

**Keywords:** Protocol; Systematic literature review; Cross-Sectional; Human resources management; High-performance work practices; High-performance work systems; AMO framework; Ability-motivation-opportunity model; Organizational performance; Motivation

## Introducción

En un entorno económico globalizado, cambiante y altamente competitivo, las organizaciones se esfuerzan por extraer el máximo rendimiento a todos sus recursos. Por este motivo, el capital humano se ha convertido en un elemento clave para el éxito de las organizaciones, y la involucración de los empleados permite mejorar los resultados de manera muy significativa (Appelbaum et al., 2000; Bayo-Moriones et al., 2015; Huselid, 1995; Jiang, Lepak, Hu, et al., 2012; Liu et al., 2009; Marín-García, 2013). El conjunto de oportunidades que se ofrece a los empleados para poder intervenir en las decisiones y encontrar soluciones conjuntas que beneficien a todas las partes (Robineau et al., 2015) puede abarcar desde programas sencillos, como un buzón de sugerencias, hasta programas complejos, como los grupos de trabajo autónomos, en los que los empleados gozan de la autoridad total para gestionar sus propias tareas (Marín-García, Juárez-Tarraga, et al., 2018; Marín-García & Conci, 2013).

Las prácticas de alta implicación se complementan entre sí para construir sistemas, que tienen como objetivo aprovechar las sinergias de las diferentes prácticas para potenciar el rendimiento y mejorar los resultados (Bayo-Moriones & Galdon-Sanchez, 2010; Della Torre & Solari, 2013; Marín-García & Conci, 2012; Rabl et al., 2014). La lista de programas/prácticas es muy amplia (Perello-Marin & Ribes-Giner, 2014). Por ello se suelen usar agrupaciones de programas/prácticas. Una de las clasificaciones más habituales es distinguir entre prácticas de formación, comunicación, participación y compensación (Lawler III, 1986; Marín-García & Conci, 2012, 2013). Otra clasificación comunmente aceptada es agrupar estas prácticas en tres grandes bloques: conocimientos o habilidades necesarias para el desempeño laboral, adecuado diseño de los puestos de trabajo para utilizar dichos conocimientos, y estructura de motivación e incentivos para promover la implicación de los empleados (AMO, por sus siglas en inglés) (Appelbaum et al., 2000; Bailey, 1993b; Boselie, 2010; Boxall & Purcell, 2003; J.-H. Choi, 2014; Marín-García, Miralles, et al., 2011; Marín-García & Conci, 2013; Raidén et al., 2006).

El modelo AMO proporciona un marco para entender la relación entre prácticas de recursos humanos y rendimiento. Sin embargo, determinar el efecto que las prácticas de alta implicación tienen sobre el rendimiento es una tarea compleja. De hecho, se han realizado estudios desde diferentes puntos de vista y utilizando un amplio rango de metodologías, lo cual proporciona resultados muy diversos (Marín-García & Martínez-Tomas, 2016). Por este motivo, aunque muchos estudios confirman los efectos positivos de estas prácticas, resulta muy difícil establecer conclusiones firmes sobre la validez del modelo, y por tanto resulta imposible establecer un modelo perfecto que funcione en todos los contextos (Marín-García & Martínez-Tomas, 2016).

Para contribuir a una mejor comprensión del modelo, proponemos estudiarlo desde una perspectiva más analítica. Concretamente, esta investigación se centra en identificar con qué frecuencia y con cuanta intensidad se emplean, en España, los diferentes programas de remuneración. El objetivo último es poder valorar si algunos de estos programas, frecuentes en la literatura anglosajona, tienen una prevalencia suficiente en el contexto español como para ser tenida en cuenta en los modelos de investigación, o si por el contrario son inexistentes o representan una constante que no tendrá capacidad explicativa en los modelos.

Este trabajo describe detalladamente una guía paso a paso para identificar la incidencia y el grado de uso de los programas de participación relacionados con la motivación extrínseca en el contexto laboral español. Para ello, utilizaremos la encuesta de estructura salarial (EES) del Instituto Nacional de Estadística (INE) de diversos periodos, ya que proporciona una excelente base de datos para alcanzar los objetivos propuestos.

Esta contribución es un protocolo. El objetivo es valorar si las preguntas de investigación y las contribuciones del estudio son pertinentes a través de la discusión científica de las mismas. Además, el protocolo supone una guía detallada de cómo realizar el estudio, ya que se explica a fondo la metodología a seguir. De este modo, se facilita la transparencia y la replicación (Marín-García, 2015). En el caso concreto de nuestro estudio, en el presente protocolo se presenta la metodología que utilizaremos para analizar los datos del INE, así como una prueba piloto con los datos referentes a la ESS del año 2006. En una posterior publicación analizaremos el resultado de la revisión bibliográfica expuesta y el resto de las series de datos disponibles.

En primer lugar, presentamos los conceptos de motivación extrínseca e intrínseca, definimos la población objetivo, enumeramos las variables a analizar, y describimos detalladamente la encuesta de estructura salarial. Posteriormente explicaremos la metodología de manera detallada y haremos un análisis piloto con los datos de 2006. Finalmente, describiremos el calendario de trabajo para llevar a cabo la investigación.

### **Marco conceptual**

En primer lugar, necesitamos definir el concepto de motivación para, posteriormente, identificar los programas de alta implicación relacionados con dicho concepto. Concretamente, estamos interesados en estudiar los programas relacionados con la remuneración y justificaremos su vinculación a la motivación externa. A continuación, explicaremos en qué consiste la encuesta de estructura salarial que realiza el INE. Finalmente, estableceremos la equivalencia entre los programas de remuneración y las variables de dicha encuesta.

La motivación puede definirse como los factores internos que incitan a iniciar y mantener un determinado comportamiento (James, 1989; Marín-García et al., 2012; Marín-García, García-Sabater, et al., 2018). Tradicionalmente se distingue entre motivación intrínseca, que se refiere a hacer algo por propio interés de lo que se hace, y motivación extrínseca, que se refiere a hacer algo a cambio de una recompensa (Serrano-Cinca et al., 2005).

Del mismo modo, podemos clasificar las prácticas de gestión de recursos humanos para fomentar la motivación de los empleados en dos grupos. Por un lado, las relacionadas con la motivación extrínseca (remuneración por rendimiento individual y/o en grupo, reconocimiento, seguridad en el empleo, promoción interna, actividades sociales, conciliación familiar, etc.), y por otro lado con la motivación interna (sentido de las tareas, desarrollo personal, identificación con las tareas) (Benet-Zepf et al., 2018; Marín-García & Martínez-Tomas, 2016; Martínez Gómez et al., 2016; Minbaeva, 2013; Perello-Marín & Ribes-Giner, 2014; Schimansky, 2014). Sin embargo, ambas categorías están relacionadas y algunos autores afirman que la falta de factores extrínsecos puede afectar a la motivación intrínseca (Bos-Nehles et al., 2013). Por otro lado, la

motivación puede verse afectada por la habilidad o concepto de autoeficacia y, por ejemplo, los empleados poco capacitados pueden desmotivarse ante la dificultad de algunas tareas (Bos-Nehles et al., 2013). Esto nos llevaría a una relación entre dos de las componentes del modelo AMO, la habilidad y la motivación, pero no va a ser objeto de estudio en esta investigación. Finalmente, los incentivos pueden hacer perder peso a la motivación interna, ya que si se da demasiada importancia a la motivación extrínseca, los trabajadores puede orientar sus conductas única y exclusivamente hacia las recompensas monetarias (Marín-García et al., 2012)

Nuestra investigación se va a centrar en los programas de participación económica. En el contexto actual europeo, el salario base no se considera de alta implicación, ya que normalmente está regulado por convenios colectivos o acuerdos de empresa y es igual para todos, con la excepción de aquellos que son sensiblemente superiores a la media del sector (Marín-García & Conci, 2012). Sin embargo, sí se consideran fuentes de alta implicación las formas de remuneración basadas en el desempeño colectivo o individual, porque contribuyen a alinear los intereses de la organización con los de los trabajadores y a mejorar la productividad y los indicadores clave de la empresa (Lawler III, 1986; Marín-García & Conci, 2012). Por este motivo, el objetivo fundamental de la investigación será estudiar la incidencia y el grado de uso de los programas de alta implicación ligados a la motivación extrínseca. Para nuestro estudio consideramos los siguientes componentes de compensación (Marín-García et al., 2012):

- Sueldo base sin complementos
- Complementos basados en el puesto de trabajo: toxicidad, peligrosidad, penosidad, ruido, nocturnidad, cuarto o quinto turno.
- Complemento por competencias o habilidades personales. El trabajador recibe una remuneración adicional en función de la formación o los conocimientos que posee, o bien por la variedad de trabajos o funciones que es capaz de realizar. En estos complementos incluimos también la remuneración en base a la posición en la organización, por los que el trabajador recibe una cantidad extra en base a las responsabilidades de supervisión.
- Complementos basados en el rendimiento. Tanto los basados en el desempeño colectivo, en los que un grupo de trabajadores reciben una cantidad adicional por la consecución de unas metas u objetivos colectivos; como los basados en el desempeño individual, en los que se vincula el incentivo a la consecución de unas metas u objetivos individuales. Asimismo, debemos incluir en este bloque el reparto de beneficios o el reparto de ganancias (*gainsharing*: en base al rendimiento de un área de trabajo o departamento o toda la organización, el trabajador percibe una cantidad en función de los ahorros de coste obtenidos por la producción de un bien o servicio. Se calculan en base a un objetivo previamente pactado que incluye costes sobre los que pueden influir los trabajadores. Un ejemplo de estos programas son los incentivos por sugerencia de mejora aportadas, en los que el trabajador recibe una cantidad en base al ahorro o los beneficios obtenidos por la organización derivados de las sugerencias individuales o colectivas para mejorar el coste, la productividad o la calidad.

- Retribuciones indirectas. Sustitutos al pago en metálico que tienen un equivalente monetario. Por ejemplo, días extra de vacaciones, viajes, cursos de formación, seguros médicos, descuentos en determinadas adquisiciones, o coche de empresa.
- Seguridad en el empleo. Cláusulas en los contratos o políticas de empresa destinadas a evitar despidos.
- Recompensas no monetarias. Alternativas a la remuneración monetaria, como por ejemplo felicitaciones, programas de reconocimiento tipo “empleado del mes”, celebraciones, o aparecer en la revista de la compañía o en los spots publicitarios.

Además de estos programas, consideraremos también el pago por la realización de horas extraordinarias, puesto que en muchos casos constituye un incentivo para los trabajadores, especialmente en sectores donde el salario base es bajo.

En la Tabla 1 presentamos la relación entre los programas de participación económica objeto de estudio y las variables que contempla la EES del INE. Como puede observarse, una limitación importante es que la encuesta de estructura salarial agrupa diversos componentes de la compensación en una única categoría (por ejemplo algunos complementos fijos de puesto y personales). También se da la situación de que los complementos basados en el puesto de trabajo o en el rendimiento pueden aparecer en dos apartados de la EES. Además, los complementos de cuantía variable solo están disponibles hasta el año 2006. Por lo tanto, no se podrá analizar cada programa de participación con los datos disponibles en las series posteriores. Sin embargo, podremos analizar a grandes rasgos la incidencia y el porcentaje de uso de algunas agrupaciones de componentes de compensación.

Tabla 1: Relación entre EES y programas de participación económica

Encuesta de estructura salarial (INE)		Componentes de la compensación
Salario base mes		Sueldo base sin complementos
Pago por horas extraordinarias mes		Pago por horas extraordinarias
Total de complementos salariales mes (periodicidad fija)	Pluses por turno (cuantía fija)	Complementos salariales basados en el puesto de trabajo
	Otros complementos de cuantía fija	Complementos salariales basados en el puesto de trabajo Complementos por competencias o habilidades personales
	Complementos de cuantía variable	Complementos basados en el rendimiento de ciclo muy corto
Total de pagos extraordinarios	Periodicidad y cuantía fijos	Pagas extraordinarias Gratificaciones extraordinarias
	No periódicos y cuantía variable	Complementos basados en el rendimiento de ciclo largo
	En especie	Pueden asociarse a cualquiera de los componentes monetarios de remuneración
Tipo de contrato de trabajo (temporal / Indefinido)		Seguridad en el empleo
No disponible en EES		Recompensas no monetarias

Fuente de elaboración propia

### Contribución y preguntas de investigación

Teniendo en cuenta que en trabajos previos se ha observado una notable diferencia entre las pautas de remuneración de Estados Unidos, España y China (Marín-García et al., 2008; C.-S. Yu

et al., 2000), es posible que determinados programas que habitualmente se incorporan a las investigaciones de origen anglosajón, no sean de excesiva aplicación en España. Esto puede ser debido, por ejemplo, a la rigidez de la legislación laboral española en comparación con la norteamericana, o a otras causas culturales o coyunturales.

En base a lo expuesto en el párrafo anterior, se podría acortar la longitud de los cuestionarios a emplear en las investigaciones en determinados países. Al mismo tiempo, se evitaría hacer preguntas que pudieran hacer pensar al entrevistado que los académicos no están al tanto de la realidad empresarial. En este sentido, es llamativo que los complementos salariales en la EES de 2006 estén desglosado en complementos de trabajo a turno, en fin de semana o por nocturnidad, y en complementos salariales variables (relacionados únicamente con la cantidad o calidad del trabajo o los resultados de la empresa). Sin embargo, a partir del 2010 únicamente se distinguen los complementos por turno, fin de semana o nocturnidad. Quizás sea un indicio de que los otros complementos no son demasiado relevantes en el contexto español.

Por otra parte, muy pocas investigaciones sobre prácticas de recursos humanos cuentan con los recursos necesarios para realizar un muestreo probabilístico aleatorio de toda la población objeto de estudio. Además, suele ser habitual tener una baja tasa de respuesta en las encuestas realizadas en territorio español (en torno al 10%-20%) (Baruch & Holtom, 2008; Erdman et al., 2016; Frohlich, 2002; Hendra & Hill, n.d.). Por ello, siempre es necesario poder comprobar que la muestra utilizada no es demasiado sesgada o atípica como para comprometer la generalización de los resultados. Consideramos que contar con una estimación poblacional fiable del orden de magnitud de grado de uso de los programas de remuneración, podría ayudar a contrastar la prevalencia de estas variables en las muestras y decidir si hay indicios de sesgo en las contestaciones de los participantes.

Por ello, las preguntas de investigación que nos planteamos, y que resolveremos en una publicación posterior al protocolo, son:

- 1- ¿Cuál es la variedad e incidencia de los sistemas de compensación de los empleados de las empresas españolas? ¿Qué programas se utilizan y cuáles no? ¿Con qué intensidad (peso relativo de la masa salarial de los diferentes programas)?
- 2- ¿La desaparición de los detalles en la categoría de complementos salariales a partir de 2010 es debida a la baja incidencia de este tipo de programas en la encuesta de 2006?
- 3- ¿Existen diferencias en variedad o intensidad en función de si la organización para la que se trabaja es industrial o de servicio; o si es pequeña/mediana/grande? ¿depende de si la persona ocupa un puesto sin supervisión -operario- o si es un mando? ¿influye la antigüedad; o si es hombre/mujer; o el tipo de contrato; o la edad; o el nivel de estudios?
- 4- ¿Qué ha sucedido con los programas de motivación basada en salario como consecuencia de la crisis? Analizaremos diversas encuestas (precrisis: 2006, crisis: 2010, postcrisis: 2014).

## **Metodología**

Queremos abordar nuestra investigación desde dos perspectivas diferentes. Por un lado, buscaremos respuesta a nuestras preguntas en la literatura ya publicada. Por otro lado, intentaremos dar respuesta analizando los datos disponibles de las EES (2006 a 2014).

Por ello, en esta sección distinguimos dos metodologías distintas. Por un lado, la utilizada para llevar a cabo la revisión sistemática de literatura, y por otro la que describe el análisis estadístico de los datos de la encuesta de estructura salarial. Ambas persiguen ser una guía detallada que se seguirá en la investigación posterior una vez aceptado el protocolo y para que pueda replicarse paso a paso el proceso en futuras investigaciones.

### ***Revisión sistemática de literatura***

Comenzamos el estudio estableciendo un protocolo de búsqueda, con el objetivo de recopilar las investigaciones más relevantes relacionadas con nuestro artículo. Concretamente, estamos interesados en conocer los aspectos más relevantes de la estructura salarial en España, y cuáles son sus componentes más importantes. Este protocolo utiliza procedimientos transparentes para asegurar un trabajo estructurado que pueda ser fácilmente replicado en futuras investigaciones (Marín-García, 2015, 2019). Por otro lado, el protocolo está diseñado para minimizar los posibles sesgos (Marín-García et al., 2015).

En primer lugar, definimos los criterios de inclusión y exclusión, así como las palabras clave relacionadas con la investigación.

#### Criterios de inclusión

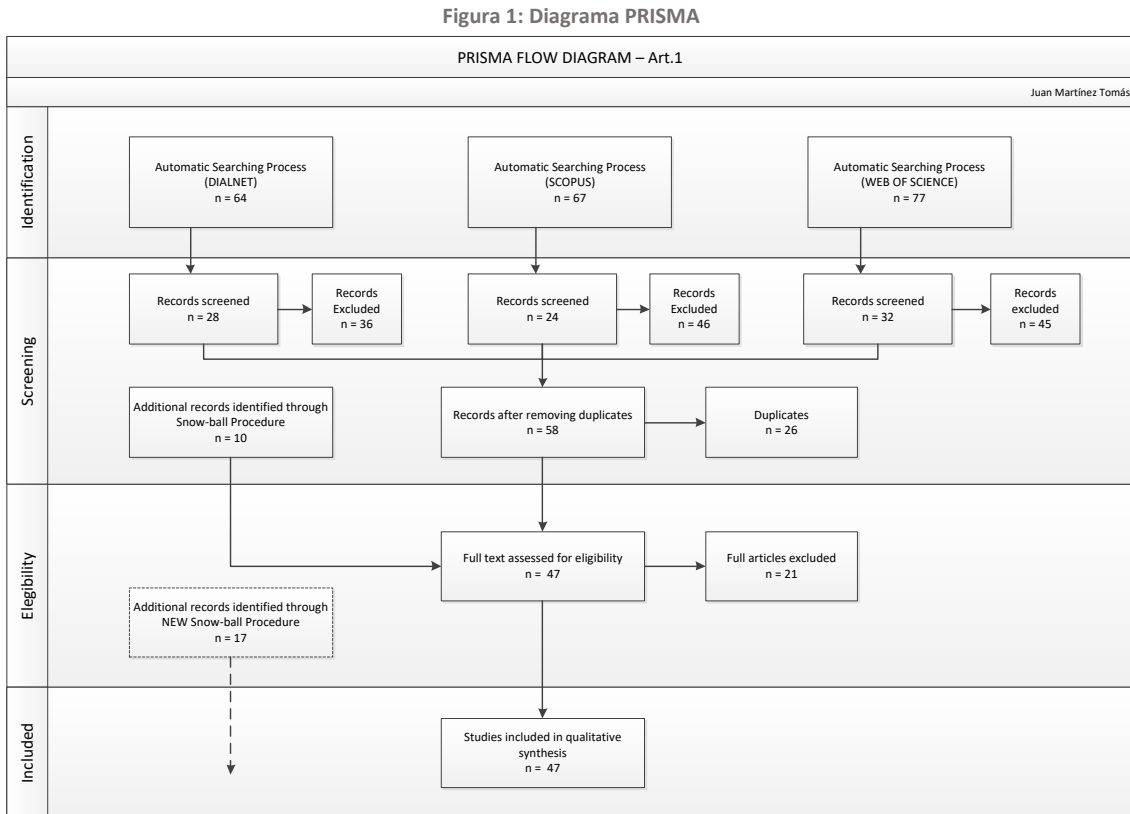
- Artículos científicos indexados en Scopus, Web of Science y Dialnet.
- Artículos publicados entre 2005 y 2018 en el campo de ciencias sociales y economía y empresa.
- Artículos escritos en inglés o español.
- Investigaciones relacionadas con la composición de la estructura salarial en España, y que preferiblemente contemplen el uso de programas de participación o el concepto de retribución variable. Por tanto, serán interesantes los artículos que hablen de la modificación de la estructura salarial, y no tanto aquellos que traten el salario como valor absoluto.
- Investigaciones relacionadas con la estructura salarial, que traten el salario como valor absoluto pero que proporcionen información acerca de qué factores influyen en la composición de los salarios, como por ejemplo la negociación colectiva a nivel regional o a nivel empresarial, el nivel educativo, el sector, el tamaño de la empresa, entre otros.

#### Criterios de exclusión

- Investigaciones no relacionadas con la estructura salarial.
- Investigaciones relacionadas con la estructura salarial basadas en el desarrollo de modelos matemáticos para representar la distribución salarial o la evolución de los salarios en el tiempo.

- Investigaciones relacionadas con la estructura salarial, que traten el salario como valor absoluto y estén basadas en describir los efectos de ciclos económicos sobre la variación de la distribución salarial o el aumento o disminución del desempleo.

La búsqueda automática se ha realizado en tres bases de datos distintas (Scopus, Dialnet y Web of Science). El siguiente diagrama PRISMA (Figura 1) muestra gráficamente todas las fases (Identificación, revisión, elección e inclusión):



Fuente de elaboración propia

En la fase de Identificación extraemos los resultados mediante búsquedas realizadas en Dialnet, Scopus y Web of Science, como puede verse en la siguiente tabla (Tabla 2). En dichas bases de datos los resultados se obtienen utilizando los términos “estructura salarial” o “wage structure”, en combinación con los términos “España” o “Spain”, puesto que buscamos datos procedentes del mercado laboral español. Para evitar posibles sesgos y garantizar la obtención de todos los artículos relacionados, realizamos una nueva búsqueda en cada una de las bases de datos ampliando los términos. En la segunda búsqueda son “estructura salarial”, “wage structure”, “structure salary”, “wage policy”, “wage formation”, “structure of wages”, “compensation structure”, en combinación con los términos “Spain” o “España”.

Tabla 2: Estrategia de búsqueda automática (Realizada en octubre 2018). (\*Dialnet: 31+33= 64)

DIALNET	Resultados
<a href="https://dialnet.unirioja.es/buscar/documentos?query=Dismax.DOCUMENTAL_RESUMENES=&amp;query=Dismax.DOCUMENTAL_AUTORES=&amp;filtros.DOCUMENTAL_FACET_MATERIA=17&amp;rango.DOCUMENTAL_ANYO_PUBLICACION=&amp;rango.DOCUMENTAL_ANYO_PUBLICACION=&amp;query=Dismax.DOCUMENTAL_ENTIDAD=&amp;filtros.DOCUMENTAL_FACET_ENTIDAD=artrev&amp;query=Dismax.DOCUMENTAL_TITULOS=&amp;query=Dismax.DOCUMENTAL_TODO=(%22estructura%20salarial%22%20OR%20%22wage%20distribution%22)%20AND%20(spain%20OR%20espa%C3%B1a)">https://dialnet.unirioja.es/buscar/documentos?query=Dismax.DOCUMENTAL_RESUMENES=&amp;query=Dismax.DOCUMENTAL_AUTORES=&amp;filtros.DOCUMENTAL_FACET_MATERIA=17&amp;rango.DOCUMENTAL_ANYO_PUBLICACION=&amp;rango.DOCUMENTAL_ANYO_PUBLICACION=&amp;query=Dismax.DOCUMENTAL_ENTIDAD=&amp;filtros.DOCUMENTAL_FACET_ENTIDAD=artrev&amp;query=Dismax.DOCUMENTAL_TITULOS=&amp;query=Dismax.DOCUMENTAL_TODO=(%22estructura%20salarial%22%20OR%20%22wage%20distribution%22)%20AND%20(spain%20OR%20espa%C3%B1a)</a>	31



https://dialnet.unirioja.es/buscar/documentos?filtros.DOCUMENTAL_FACET_ENTIDAD=artrev&filtros.DOCUMENTAL_FACET_MATERIA=17&querysDismax.DOCUMENTAL_TODO=%28%22estructura+salarial%22+OR+%22wage+structure%22+OR+%22structure+salary%22+OR+%22wage+policy%22+OR+%22wage+formation%22+OR+%22structure+of+wages%22+OR+%22compensation+structure%22%29+AND+%28spain+OR+espa%C3%B1a%29&registrosPorPagina=50&camposOrdenacion=%7BDOCUMENTAL_SORT_ANYOPUB%3DDESC%7D	33
<b>SCOPUS</b>	<b>Resultados</b>
(TITLE-ABS-KEY ("estructura salarial" OR (wage* W/1 distribution*) OR (wage* W/1 structure*) OR (wage* W/1 salar*) OR (wage* W/1 polic*) OR (wage* W/1 formation) OR (compensation* W/1 distribution*) OR (compensation* W/1 structure*) OR (compensation* W/1 salar*) OR (compensation* W/1 polici*) OR (compensation* W/1 formation)) AND (spain OR españa)) AND (PUBYEAR > 2004) AND ( LIMIT-TO ( SUBJAREA,"ECON" ) OR LIMIT-TO ( SUBJAREA,"BUSI" ) OR LIMIT-TO ( SUBJAREA,"SOCI" ) )	67
<b>WEB OF SCIENCE</b>	<b>Resultados</b>
((Ts=("estructura salarial" OR ( wage* near/1 distribution* ) OR (wage* near/1 structure*) OR (wage* near/1 salar*) OR (wage* near/1 polic*) OR (wage* near/1 formation) OR (compensation* near/1 distribution* ) OR (compensation* near/1 structure*) OR (compensation* near/1 salar*) OR (compensation* near/1 polici*) OR (compensation* near/1 formation)) AND (spain OR españa)))) AND DOCUMENT TYPES: (Article OR Review) Refined by: WEB OF SCIENCE CATEGORIES: (ECONOMICS OR INDUSTRIAL RELATIONS LABOR OR MANAGEMENT OR SOCIOLOGY OR BUSINESS FINANCE OR BUSINESS OR SOCIAL SCIENCES INTERDISCIPLINARY ) Timespan: 2005-2018. Indexes: SSCI, ESCI.	77

Fuente de elaboración propia

Durante la fase de filtrado utilizamos este procedimiento:

1. Ordenar los artículos según su relevancia.
2. Revisar tanto el título como el resumen de cada artículo, excluyendo aquellos que claramente no están relacionados con los objetivos descritos anteriormente y seleccionando aquellos que pudieran ser acordes a los criterios de inclusión definidos. Almacenar los artículos seleccionados en un gestor de referencias (Mendeley) para una posterior revisión.
3. Descargar los artículos completos de los documentos seleccionados en el paso anterior.

Los artículos seleccionados en esta fase se almacenan en tres carpetas diferentes, una para cada base de datos. Por este motivo, la última acción de esta fase es comprobar si existen artículos duplicados y proceder a su fusión.

En la fase de elección se realiza un proceso de filtrado de los artículos seleccionados previamente. Para ello se utiliza el siguiente proceso:

1. Ordenar las referencias por su título en orden alfabético, con el objetivo de minimizar sesgos causados por factores como el año de publicación o la relevancia del artículo.
2. Clasificar las referencias utilizando la siguiente codificación (Tabla 3):

Tabla 3: Codificación para la fase de elección

Código	Definición	Cuando utilizar	Acción	Ejemplo
<b>A. Aprobado</b>	El título y el resumen están claramente relacionados con los objetivos de la investigación.	Cuando el artículo es acorde a los criterios de inclusión y no afecta a los criterios de exclusión.	Incluir el artículo en la lista de referencias	Alcalá Agulló, F., & Hernández Martínez, P. J. (2007). Estructura empresarial, educación media por establecimientos y salarios: la dinámica reciente. Cuadernos Económicos de ICE, (74), 73–100.

<b>R. Rechazado</b>	El título y el resumen no tienen relación con los objetivos del estudio.	Cuando el artículo es acorde a los criterios de exclusión.	Excluir la referencia.	Febrer, A., & Mora, J. (2005). Wage Distribution in Spain, 1994-1999: An Application of a Flexible Estimator of Conditional Distributions. <i>Ivie</i> , 04 (febrero), 1–38.
<b>Q. Cuestionable</b>	El artículo y el resumen no están claramente relacionados con los objetivos del estudio.	Cuando no hay evidencia clara de que el resumen sea acorde con los criterios de inclusión, pero parece estar relacionado con ellos.	Analizar el texto completo para determinar si esta referencia debe ser incluida en el estudio.	Simón, H., & Murillo, I. (2014). ¿Sufren las mujeres inmigrantes una doble penalización salarial? Evidencia para España. <i>Cuadernos Económicos de ICE</i> , (87), 85–126.
<b>I. Interesante</b>	El artículo y el resumen no están directamente relacionados con los objetivos, pero son interesantes para investigaciones futuras.	Cuando el resumen no es acorde a los criterios de inclusión, pero el tema está relacionado con el estudio y puede ser interesante para futuros trabajos.	Excluir la referencia, pero archivarla en otra carpeta.	Manuel Casado, J., & Simón Pérez, H. J. (2015). La evolución de la estructura salarial, 2002-2010. <i>Revista de Economía Aplicada</i> , 23(67), 5–43.

Fuente de elaboración propia

Por otro lado, utilizaremos la estrategia de “bola de nieve” para incorporar nuevas referencias una vez finalizado el proceso de codificación comentado anteriormente. Dicha estrategia consiste en extraer nuevas referencias a partir de la lectura de los artículos seleccionados. Todas las referencias codificadas como aprobadas o cuestionables son almacenadas en una nueva carpeta del gestor de referencias para utilizarlas durante la fase de inclusión. Como resultado 47 artículos han sido seleccionados para esta última fase.

Con el objetivo de extraer la información de manera estructurada de los 47 artículos seleccionados, y ser capaz de responder a las preguntas de investigación, el primer autor del artículo codificará dichos artículos con los siguientes ítems:

- Artículo: especificando el autor, año y títulos del artículo (ej. *Carrasco, R., Jimeno, J. F., & Ortega Masague, A. C. (2011). Accounting for Changes in the Spanish Wage Distribution: The Role of Employment Composition Effects*)
- Objetivos. Una breve descripción de los objetivos del artículo (ej. *“En este trabajo se analiza las diferencias entre los salarios percibidos por los trabajadores en las sociedades cooperativas y las empresas capitalistas en España a partir de la Muestra Continua de Vidas Labores (MCVL)”* (Clemente et al., 2012))
- ¿Disgrega?: Para identificar si existen estudios que traten de manera independiente los distintos componentes de la composición salarial (sueldo base, complementos salariales, pagos extraordinarios)
- Tipo de encuesta: encuestas nacionales o europeas con muestras que garantizan la representatividad o muestras ad-hoc de los investigadores. En el caso de encuestas nacionales o europeas se anota el nombre completo de la encuesta para identificar nuevas bases de datos que puedan ser útiles en futuras investigaciones
- ¿EES?: Para indicar si el artículo utiliza o no datos de la encuesta de estructura salarial del INE
- Población: país o área geográfica de la cual es representativa la muestra de datos
- Año: Indicando el año de recolección o las fuentes de datos usadas en la investigación

- Palabras clave: identificar las ideas principales de los artículos e identificar puntos en común, como por ejemplo la influencia del nivel educativo en la distribución salarial.
- Conclusiones: reflejar las conclusiones más interesantes de los estudios, en relación con nuestra propia investigación
- Ideas interesantes: extraer ideas interesantes que puedan ser el punto de partida de futuras investigaciones, o que conduzcan a una mayor profundización de algún aspecto relacionado con la presente investigación.

### ***Analisis cuantitativo de la EES***

En nuestra investigación utilizaremos como datos de fuente secundaria la EES del INE. En primer lugar, es necesario indicar que para el análisis utilizaremos las últimas tres series disponibles de la encuesta de estructura salarial, de los años 2006, 2010 y 2014 (esperamos que en breve podamos contar con los datos publicados de la serie de 2018). Los microdatos de las distintas series están disponibles en la base de datos del INE, y para el análisis utilizaremos el software IBM SPSS Statistics v22 (I B M corp., 2013). Como hemos comentado anteriormente, en este protocolo se realiza un piloto utilizando únicamente datos de la serie del año 2006, ya que lo que se pretende es establecer una metodología que replicaremos, si procede, en el artículo de la investigación con todas las series disponibles.

La EES recoge datos sobre la estructura y distribución de los salarios. Se realiza cada cuatro años en los estados miembros de la Unión Europea. En España, la encuesta la realiza el Instituto Nacional de Estadística con un muestreo bietápico estratificado. La primera etapa selecciona centros de trabajo que coticen en la Seguridad Social, considerando cada categoría de la Clasificación Nacional de Ocupaciones (CNO) como una población independiente. En cada categoría CNO se estratifica por las 18 comunidades autónomas y 8 intervalos de tamaño del centro (desde 1-9, hasta más de 500). En la segunda etapa, se selecciona una muestra de trabajadores aleatoria en cada centro de trabajo elegido en la primera etapa (en promedio 8 trabajadores por centro, pero dependiendo del tamaño del centro de trabajo pueden ser entre 1 y 50). Los datos los facilita la empresa (no el trabajador) a partir de sus registros de nóminas.

La población estudiada la componen trabajadores por cuenta ajena que han estado dados de alta todo el mes de octubre del año de la encuesta, excluyendo a aquellos cuya remuneración sea principalmente por beneficios o comisiones. En la encuesta de 2006 participaron 235.272 personas pertenecientes a 27.303 centros de trabajo (3.376 de ellos aportaron datos de más de 20 trabajadores, 2.289 entre 10 y 20 personas, 9.332 entre 5 y 10 personas)

Los conceptos incluidos en la encuesta son los siguientes (Instituto Nacional Estadística, 2017):

- Conceptos salariales mensual. Se computan los devengos brutos y no se incluyen cantidades correspondientes a atrasos de años anteriores, dietas, gastos de viajes o indemnizaciones. La encuesta contempla los siguientes, con referencia el mes de Octubre (este mes está poco afectado por vacaciones o pagos de vencimiento superior al mes), y es ajustada para un mes equivalente de trabajo completo en caso de que la personas haya tenido reducciones de jornada que afectaban al salario:
  - SALBASE Salario base mes: es el mínimo acordado en los convenios colectivos o, en caso de no existir, en el salario mínimo interprofesional

- PHEXTRA Pago por horas extraordinarias mes: trabajo adicional realizado fuera de la jornada laboral
- COMSAL Total complementos salariales mes: Se perciben mensualmente y están establecidos mediante la negociación colectiva, o en su defecto en los contratos individuales. Pueden ser de varios tipos y no suelen tener una terminología uniforme (pluses, primas, complementos, premios)
  - Complementos personales (antigüedad, conocimientos, cualificación académica o profesional)
  - Complementos relacionados con el puesto de trabajo: pluses por turno (turno, fin de semana, nocturnidad, trabajo en festivos), penosidad, peligrosidad, turnicidad, toxicidad
  - COMSALV Complementos variables (primas de producción-productividad, incentivos, premios de calidad, asistencia, puntualidad, participación en beneficios, reparto de ganancias, logro de objetivos). En la serie de 2006 se recoge el total de complementos salariales y, además, la parte de estos que corresponde a pluses por turno y la parte que corresponde a complementos variables. A partir del 2010 únicamente se detallan los pluses por turnos
- Paga extraordinaria mes: en el caso de que haya algún abono de las mismas en el mes de octubre
- Horas trabajadas en mes de octubre. Se consideran las horas normales más las extraordinarias. Esto permite calcular la ganancia por hora dividiendo la ganancia mensual entre las horas trabajadas
- Pagos extraordinarios: que recogen aquellos pagos de vencimiento superior al período corriente de pago (generalmente el mes). Se dividen en tres categorías:
  - PEXTRAAF Fijos: no dependen de los resultados, son conocidos de antemano, e incluyen las gratificaciones extraordinarias (pagas de navidad y verano)
  - PEXTRAAV Variables: su cuantía es desconocida de antemano y está ligada a los resultados individuales o de empresa relacionados con objetivos de producción, calidad, volumen de ventas, beneficios, etc.
  - VESP En especie: incluyen la valoración de todas las contraprestaciones a través de cualquier medio distinto al dinero (bienes, derechos o servicios)
- SALBRUTO Salario bruto anual: total de las retribuciones dinerarias pagadas por la empresa a la persona trabajadora a lo largo de todo el año (incluyendo pagas en especie, pagas extraordinarias, etc.). Se estima el salario anual equivalente al de estar trabajando todo el año en condiciones similares a las del tiempo anual trabajado
- Ocupación. Se utiliza la Clasificación Nacional de Ocupaciones (CNO) vigente en cada serie. Desde la encuesta de 2010, la CNO-11sustituye a la CNO-94. Esta clasificación utiliza como criterios el tipo de trabajo realizado y las competencias (entendidas como la capacidad de desempeñar las tareas inherentes a un puesto determinado)
- Responsabilidad en organización y supervisión de otros trabajadores. Se utiliza para conocer si el trabajador tiene asignado personal a su cargo directamente, es decir, si tiene asignadas labores de supervisión del trabajo de otros trabajadores

- Nivel de estudios. Recoge el nivel de estudios del trabajador. Hasta el año 2010 se utilizó la Clasificación Nacional de Educación 2000 (CNED-2000), que considera las siguientes categorías:

- Sin estudios (o primarios incompletos)
- Educación primaria completa
- Ciclo 1º Secundaria
- Ciclo 2º Secundaria
- Grado medio de formación profesional (FP1)
- Grado superior de formación profesional (FP2)
- Diplomados universitarios
- Titulados superiores

A partir de la encuesta del año 2014, se utiliza la clasificación CNED-2014, cuyas categorías son:

- Menos que primaria
- Educación primaria
- 1ª etapa de educación secundaria
- 2ª etapa de educación secundaria
- Enseñanzas de formación profesional (grado superior y similares)
- Diplomados universitarios y similares
- Licenciados y similares. Doctores universitarios

- Tipo de Jornada. Tiempo completo o tiempo parcial. Se considera tiempo parcial a cualquier jornada de trabajo que sea inferior a la de un trabajador a tiempo completo comparable. En la práctica, se refleja el tipo de jornada que consta en el contrato de trabajo
- Tipo de contrato de trabajo: de duración indefinida, temporal o determinada
- Otras variables. La encuesta considera otras variables para estudiar las diferencias salariales, como la edad, el sexo, la nacionalidad y la antigüedad en la empresa. Además, se recoge información relativa a la empresa como la actividad principal, el número de trabajadores, la tipología (pública o privada), el mercado principal y el tipo de convenio colectivo

Las variables de remuneración están ya ajustadas a mes equivalente de trabajo, de modo que no es necesario tener en cuenta la duración de la relación laboral o días de situación especial que afectaban a la nómina.

Calcularemos la cuantía del salario bruto mensual (referencia mes de octubre del año y sin contar la prorrata de pagas extraordinarias) como :

$$\text{SALOCTBR} = \text{SALBASE} + \text{PHEXTRA} + \text{COMSAL}$$

A partir de 2010 sólo hay GEXTRA (no se dividen en fijas y variables) de modo que en 2006

$$\text{GEXTRA} = \text{PEXTRAAF} + \text{PEXTRAAV}$$

En la serie ESS2006 podemos calcular el valor de otros complementos de cuantía fija

$$\text{COMSALotFIJ} = \text{COMSAL} - \text{COMSALTT} - \text{COMSALV}$$

En todas las series podemos calcular el valor de otros complementos que no sean turnicidad sustrayendo los complementos correspondientes al total de complementos salariales del mes:

$$\text{COMSALnoTT} = \text{COMSAL} - \text{COMSALTT}$$

La intensidad de cada componente salarial la definimos como el porcentaje que cada concepto salarial representa respecto al salario bruto total que corresponda (mensual o anual):

$\text{intSALBASE} = \text{SALBASE} / \text{SALOTBR}$

$\text{intPHEXTRA} = \text{PHEXTRA} / \text{SALOTBR}$

$\text{intCOMSAL} = \text{COMSAL} / \text{SALOTBR}$

$\text{intCOMSALTT} = \text{COMSALTT} / \text{SALOTBR}$

$\text{intCOMSALV} = \text{COMSALV} / \text{SALOTBR}$

$\text{intCOMSALotFIJ} = \text{COMSALotFIJ} / \text{SALOTBR}$

$\text{intCOMSALnoTT} = \text{COMSALnoTT} / \text{SALOTBR}$

$\text{intGEXTRA} = \text{GEXTRA} / \text{SALBRUTO}$

$\text{intPEXTRAAF} = \text{PEXTRAAF} / \text{SALBRUTO}$

$\text{intPEXTRAAV} = \text{PEXTRAAV} / \text{SALBRUTO}$

$\text{intVESP} = \text{VESP} / \text{SALBRUTO}$

Además, necesitamos crear una serie de variables dicotómicas que indiquen la presencia o ausencia de determinadas componentes de remuneración

$\text{dicPHEXTRA} = \text{PHEXTRA} > 0$

$\text{dicCOMSAL} = \text{COMSAL} > 0$

$\text{dicCOMSALTT} = \text{COMSALTT} > 0$

$\text{dicCOMSALV} = \text{COMSALV} > 0$

$\text{dicCOMSALotFIJ} = \text{COMSALotFIJ} > 0$

$\text{dicCOMSALnoTT} = \text{COMSALnoTT} > 0$

$\text{dicGEXTRA} = \text{GEXTRA} > 0$

$\text{dicPEXTRAAF} = \text{PEXTRAAF} > 0$

$\text{dicPEXTRAAV} = \text{PEXTRAAV} > 0$

$\text{dicVESP} = \text{VESP} > 0$

Analizamos toda la muestra. Dado que nos interesan los valores relativos sobre el sueldo total, los trabajadores a tiempo completo o tiempo parcial no distorsionan los resultados. Simplemente es una variable que puede explicar o no diferencias. Lo mismo puede aplicarse al tipo de contrato, de modo que podemos utilizar toda la muestra y analizar qué sucede con estas dos variables como explicativas.

La CNO y NACE serán variables de ajustes siempre que pueda tener muestra suficiente en cada estrato.

Para responder a la primera de nuestras preguntas de investigación usaremos el porcentaje de personas con ese tipo de componentes salariales y los análisis descriptivos (media, desviación estándar, máximo, mínimo, asimetría y curtosis) del porcentaje de cada uno de los componentes de remuneración sobre el salario total. Estos mismos resultados nos permitirán dar respuesta a la segunda pregunta. La sintaxis en SPSS:

```
DESCRIPTIVES VARIABLES=intSALBASE intCOMSAL intCOMSALTT intCOMSALV intCOMSALotFIJ
intCOMSALnoTT
```

```
intGEXTRA intPEXTRAAF intPEXTRAAV intVESP intPHEXTRA
/STATISTICS=MEAN STDDEV MIN MAX KURTOSIS SKEWNESS.
```

```
DESCRIPTIVES VARIABLES=dicPHEXTRA dicCOMSAL dicCOMSALTT dicCOMSALV dicCOMSALotFIJ
dicCOMSALnoTT
```

```
dicGEXTRA dicPEXTRAAF dicPEXTRAAV dicVESP
/STATISTICS=MEAN.
```

Para la tercera pregunta usaremos pruebas de diferencia de medias (ANOVA y diferencias de media no paramétricas para muestras independientes). La sintaxis en SPSS (solo se muestra de ejemplo la variable sexo; se replicaría con el resto de posibles variables explicativas):

```
ONEWAY dicPHEXTRA dicCOMSAL dicCOMSALTT dicCOMSALV dicCOMSALotFIJ
dicCOMSALnoTT dicGEXTRA
```

```
dicPEXTRAAF dicPEXTRAAV dicVESP BY SEXO
```

```
/STATISTICS DESCRIPTIVES
```

```
/MISSING ANALYSIS.
```

```
NPTESTS
```

```
/INDEPENDENT TEST (intSALBASE intPHEXTRA intCOMSAL intCOMSALTT intCOMSALV
intCOMSALotFIJ
```

```
intCOMSALnoTT intGEXTRA intPEXTRAAF intPEXTRAAV intVESP) GROUP (SEXO)
```

```
/MISSING SCOPE=ANALYSIS USERMISSING=EXCLUDE
```

```
/CRITERIA ALPHA=0.05 CILEVEL=95.
```

Estos análisis se completarán con una regresión logística multinivel (con *random intercept*) (Toch et al., 2014) que serán usados también para la cuarta y última de las preguntas. Ejemplo de sintaxis de SPSS (solo se muestra para una de las variables de componentes de remuneración. Se replicaría con el resto):

```
GENLIN dicCOMSAL (ORDER=ASCENDING) BY SEXO ESTRATO2 CONTROL MERCADO REGULACION
TIPOPAIS
```

```
RESPONSA_old (ORDER=DESCENDING) WITH ESTU
```

```
/MODEL SEXO CONTROL MERCADO ESTRATO2 REGULACION TIPOPAIS RESPONSA_old ESTU
```

```
DISTRIBUTION=MULTINOMIAL LINK=CUMLOGIT
```

```
/CRITERIA METHOD=FISHER(1) SCALE=1 COVB=ROBUST MAXITERATIONS=100
```

```
MAXSTEPHALVING=5
```

```
PCONVERGE=1E-006(Absolute) SINGULAR=1E-012 ANALYSISTYPE=3(WALD) CILEVEL=95
```

```
CITYPE=WALD
```

```
LIKELIHOOD=FULL
```

```
/MISSING CLASSMISSING=EXCLUDE
```

```
/PRINT CPS DESCRIPTIVES MODELINFO FIT SUMMARY SOLUTION (EXPONENTIATED).
```

## **Resultados de la revisión sistemática de literatura**

La principal conclusión de la aplicación de las estrategias de búsqueda es que existen muy pocas investigaciones relacionadas con la estructura salarial en España que estudien los diversos componentes salariales de manera disgregada. La gran mayoría de los estudios tratan el salario como variable absoluta; y estudian la distribución salarial en base a su evolución a través del tiempo o a través de factores que influyen y crean diferencias entre diversos grupos de la distribución salarial. Este hecho justifica la existencia de un hueco de investigación, ya que tras la revisión de literatura no hemos encontrado ningún artículo que analice el uso de programas de participación económica a través de la encuesta de estructura salarial, por lo que es interesante llevar a cabo el análisis estadístico pertinente.

En segundo lugar, la mayoría de los estudios identifican variables de ajuste que afectan a la composición de la distribución salarial a nivel global. Por un lado, hay autores que estudian los factores relativos a las organizaciones, como por ejemplo la internacionalización (Alcalá Agulló & Hernández Martínez, 2006, 2007; Christopoulou et al., 2010), la inversión en tecnología (Christopoulou et al., 2010) o la innovación (Arranz Muñoz & García Serrano, 2014), o si pertenece al sector público o privado (Arranz Muñoz & García Serrano, 2014; Giordano et al., 2015). Por otro lado, algunos autores afirman que las variaciones salariales están más ligadas a los factores inherentes del trabajador, como por ejemplo las diferencias salariales de género (Fernández et al., 2006; Larraz & Herrera, 2016; Navarro-Gómez & Rueda-Narvaez, 2015; Rica, 2005; Simon et al., 2017; Simón & Murillo, 2014), el nivel educativo medio (Alcalá Agulló & Hernández Martínez, 2007; Peeters & den Reijer, 2014) o la antigüedad o el tipo de contrato (Alcalá Agulló & Hernández Martínez, 2006). El estudio de dichas variables de ajuste es interesante puesto que también podrían afectar a la estructura del salario y estar de este modo relacionadas con nuestra investigación.

Por último, encontramos algunos autores que hablan de las variaciones salariales a consecuencia de la crisis económica (Arranz Muñoz & García Serrano, 2012, 2014; Carrasco et al., 2015; Murillo Huertas & Simón, 2014). Por este motivo, uno de los objetivos del futuro artículo de investigación será conocer qué ha sucedido con los programas de motivación económica como consecuencia de la crisis y por ello estudiaremos diferentes series de datos del INE (2006, 2010, 2014 y 2018, si se encuentra disponible).

## **Resultados del análisis cuantitativo (piloto 2006)**

La primera de nuestras preguntas, relativa a la variedad e incidencia de los sistemas de compensación en los empleados de las empresas españolas se refleja en la Tabla 4. Ateniéndonos a las pagas mensuales, los componentes más frecuentes son los complementos salariales fijos que no tienen que ver con turnicidad (75% de las personas de la EES2006). A continuación, se sitúan los complementos variables (29%) y los fijos por turnicidad (15%). Las pagas por horas extraordinarias afectan a muchas menos personas (6%). Si observamos el salario total anual, destacan las gratificaciones periódicas (89%). Las gratificaciones variables afectan a solo un 21% de la muestra y el pago en especie es mucho más reducido (11%).



Además de la incidencia de cada uno de los tipos de componentes salariales, es interesante conocer la intensidad de estos. En nuestro caso hemos calculado el porcentaje que cada componente salarial representa sobre el total del salario recibido. En este caso, el salario base domina como la parte principal del salario (73%) a gran distancia de cualquiera de los otros componentes. Le siguen los complementos fijos no asociados a turnicidad (18%), las gratificaciones extraordinarias fijas (13%) y los complementos variables (5,5%). Las gratificaciones extraordinarias variables (1,8%), los complementos por turnicidad (1%), las horas extra (<1%) y el pago en especie (<1%) ocupan los últimos lugares representando una parte muy marginal de total del salario percibido.

Tabla 4.- ESS 2006. <sup>a</sup>Porcentaje de personas que tienen alguno de los componentes de compensación y <sup>b</sup>descriptivos de la intensidad de cada uno de los componentes (% respecto al salario total)

Variable	% de personas <sup>a</sup>	Mínimo <sup>b</sup>	Máximo <sup>b</sup>	Media <sup>b</sup>	Desviación estándar <sup>b</sup>	Asimetría <sup>b</sup>	Curtosis <sup>b</sup>
SALBASE	1,0000	,00	1,00	,7352	,2151	-,518	-,669
PHEXTRA	,0661	,00	,70	,0072	,0368	7,011	59,400
COMSAL	,8443	,00	1,00	,2576	,2123	,563	-,587
COMSALTT	,1511	,00	,86	,0156	,0532	5,116	34,793
COMSALV	,2869	,00	1,00	,0557	,1226	2,772	8,283
COMSALotFIJ	,7469	-,04	1,00	,1863	,1956	1,005	,202
COMSALnoTT	,8288	,00	1,00	,2420	,2080	,637	-,472
GEXTRA	,9044	,00	,92	,1469	,0869	,867	2,458
PEXTRAAF	,8925	,00	,77	,1291	,0703	,329	1,697
PEXTRAAV	,2114	,00	,84	,0178	,0525	4,316	23,301
VESP	,1148	,00	,47	,0023	,0139	13,806	276,089

N válido 235272 (muestra total)

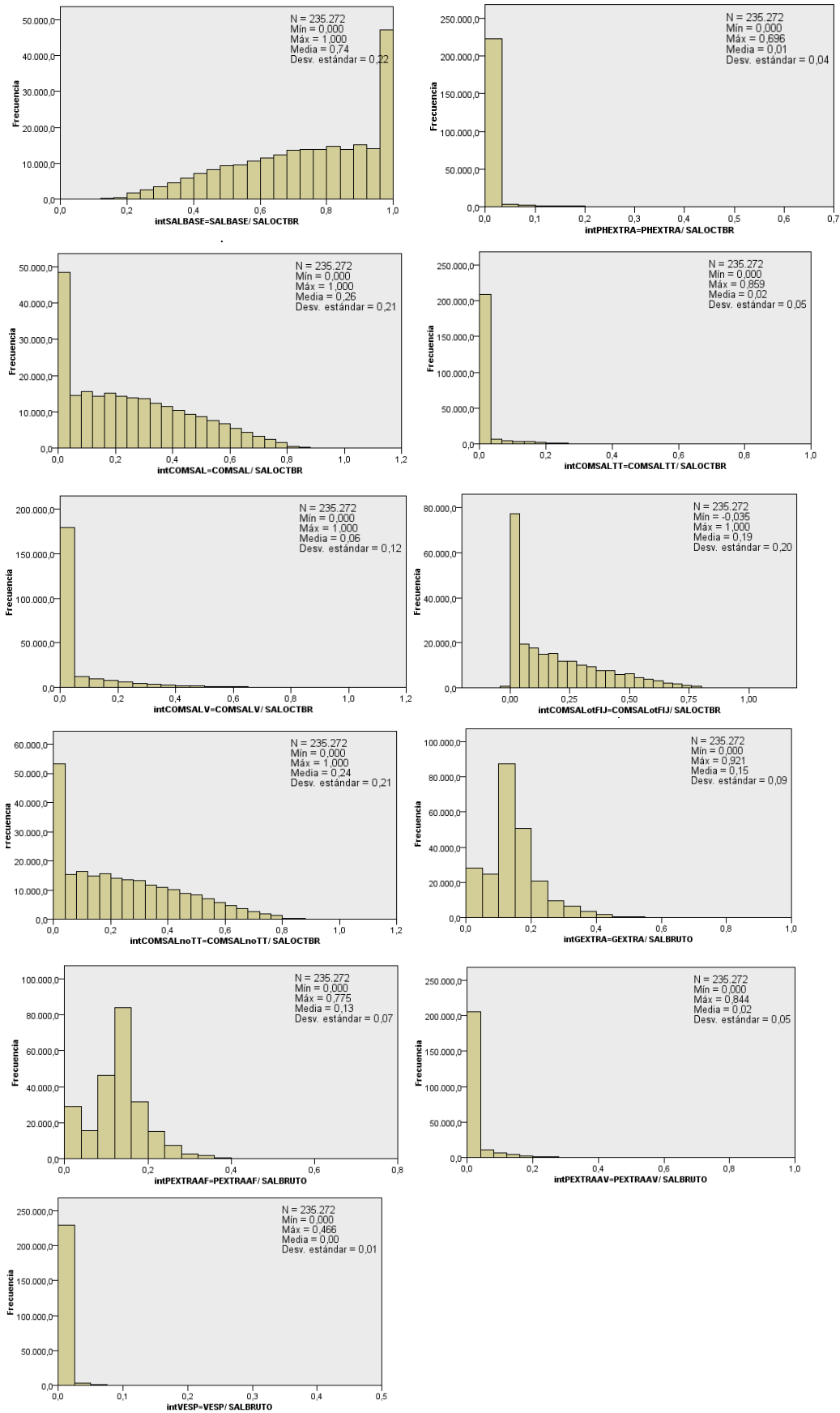
Base mensual. SALBASE: salario base; PHEXTRA: paga por horas extra; COMSAL: Total de complementos salariales; COMSALTT: pluses por turno; COMSALV: complementos variables; COMSALotFIJ: complementos salariales fijos diferentes de turnicidad; COMSALnoTT: complementos salariales fijos y variables diferentes de turnicidad.

Base anual. GEXTRA: total de gratificaciones anuales extraordinarias. PEXTRAAF: gratificaciones extraordinarias de periodicidad y cuantía fija; PEXTRAAV: gratificaciones extraordinarias no periódicas y cuantía variable; VESP: pago en especie

Fuente de elaboración propia

En la Tabla 4 podemos comprobar que bastantes de las variables presentan una elevada asimetría y/o curtosis. Del mismo modo, en la Figura la distribución de las intensidades de cada componente salarial dista mucho del patrón de distribuciones normales.

Figura 2.- Histogramas de las variables de intensidad de cada una de las componentes salariales (SALOCTBR: salario total bruto en el mes de octubre. Resto de variables ver leyenda de variables en Tabla 4)



Los análisis anteriores nos permiten confirmar que la desaparición de los detalles de componentes salariales a partir de 2010 fue debida a la baja incidencia de este tipo de programas en la encuesta de 2006. Tanto los complementos variables, como las gratificaciones extraordinarias variables, a pesar de estar presentes en las nóminas de un 18% y un 21% de los casos, no representan más que un 5,5% y un 1,8% respectivamente de la masa salarial y se consideró que no era necesario añadir ese desglose. Queda pendiente analizar si estas cifras se distribuyen uniformemente en todos los perfiles de encuestados o si algunos componentes salariales, minoritarios a nivel global de la muestra, tienen una intensidad elevada en grupos concretos de personas.

Para analizar la tercera de nuestras preguntas, realizaremos una serie de pruebas de diferencia de medias (en estos momentos informaremos de los ANOVA, pero dada la no normalidad de los datos, realizaremos en el futuro artículo de investigación análisis de diferencias de medias no paramétricas para muestras independientes). Las tablas resumen de los resultados las incluimos en los anexos (**Tabla 6 a Tabla 9**).

De los análisis realizados podemos concluir que, en prácticamente todas las variables analizadas, tanto en intensidad como en presencia de complementos indican la existencia de diferencias entre empleados de empresas públicas y privadas. Existe una proporción menor de empleados públicos con horas extra, complementos salariales variables y pago en especie. Mientras que es mayor en complementos por turnicidad, otros complementos fijos no turnicidad, gratificaciones extraordinarias variables. Las diferencias de medias significativas son notables en algunos casos, como las gratificaciones anuales variables que disfrutaban un 35% de los empleados de empresas públicas de la muestra, pero sólo un 20% de los de empresas privadas. Mientras que, en otros como la retribución en especie, la diferencia es mínima (en torno a un 10% para público y 11% para privado) a pesar de ser significativa (dado que el tamaño de la muestra es muy grande, se pueden detectar diferencias significativas, aunque no sean especialmente relevantes). Con respecto a la intensidad, las diferencias de medias entre ambos subgrupos se hacen más manifiestas. En las personas empleadas en empresas públicas el salario base tiene mucha menos intensidad (en torno al 59% del salario total) que en las privadas (en torno al 74%). Las horas extras, los complementos variables, las gratificaciones extraordinarias fijas, variables y en especie tienen una intensidad menor en los empleados de empresas públicas, mientras que los complementos por turno y otros complementos fijos son mayores. Tal como se comenta en literatura previa, estas diferencias pueden ser debidas a las características especiales de los centros de trabajo incluidos como empresas de control público, y al tipo de ocupación de las personas de la muestra. No obstante, hay que remarcar que el número de casos de empleados públicos en la muestra es excepcionalmente bajo (unos 18.000 frente a los casi 217.000 de empresa privada), dado que no se obtienen datos de funcionarios, sino de contratados en empresas con propiedad pública. En el futuro sería recomendable centrar los análisis sólo en empleados de empresas privadas dado que la ESS no tiene suficiente número de empleados de empresas públicas para soportar análisis multivariantes.

En el caso de los hombres, éstos reciben más tipos de complementos salariales que las mujeres. Además, la intensidad de estos complementos es siempre mayor, aunque las diferencias de medias no sean tan grandes como en el análisis de otras variables.

En cuanto a la duración del contrato, las diferencias de media de presencia de complementos mensuales no son muy grandes, a pesar de ser significativas y mayores (en todos los casos) para las personas con contrato indefinido que las que tienen contrato de duración determinada. Sin embargo, las diferencias se hacen notables en los pagos extraordinarios, especialmente en los variables y en especie, que afectan mucho más a las personas fijas que a las de duración determinada. Sin embargo, aunque haya diferencias en el porcentaje de personas que disfrutan de estos complementos, la diferencia de medias de intensidad de los complementos mensuales no es muy grande a pesar de ser significativa. En la remuneración mensual, la parte de complementos tiene, en promedio, una intensidad 5% mayor en contratados fijos respecto a los contratados en duración determinada (o si se prefiere, la intensidad de sueldo base para fijos está en torno al 72% y para duración de determinada es el 77%. El resto del sueldo mensual son complementos, principalmente fijos). En retribuciones anuales la situación es parecida, con una diferencia del 2% en la intensidad de los pagos extraordinarios fijos o variables.

Los centros de trabajo más grandes tienden a ofrecer más tipos de complementos. A veces la diferencia entre centros medianos (50-199 personas) y grandes (>200 personas) no es significativa, pero estos grupos siempre se diferencian de las empresas de menos de 50 personas. En cuanto a intensidad los resultados presentan la misma tendencia. Los centros grandes tienden a ofrecer una intensidad mayor de complementos en lugar de centrar la compensación en el salario base. La única excepción es el pago extraordinario fijo, que se mantienen en todos los casos con una intensidad en torno al 13%. Es decir, en la mayoría de los centros esta componente se limita a dos pagas extra al año, probablemente ateniéndose a lo que marque el convenio, como veremos más adelante.

Las personas con dedicación completa disfrutan de más tipos de complementos que las personas a tiempo parcial. En general, en casi todos los complementos la media de personas fijas disfrutando el complemento es un 10% más que la media de las personas a tiempo parcial. Por lo que respecta a la intensidad, aunque la media sea significativamente mayor para las personas fijas, la diferencia no es superior al 5% en el complemento que más difiere. De este modo, el tipo de dedicación no parece explicar por sí sola una gran diferencia en la intensidad de cada componente de la compensación.

Con respecto al tipo de mercado en el que opera el centro de trabajo, las principales diferencias de medias se producen entre los centros de trabajo cuyo mercado es local, nacional o internacional (el hecho de que sea europeo o mundial no parece generar muchas diferencias y no siempre en el mismo sentido. Como además hay pocos datos de estas categorías, sería recomendable agruparlas en análisis posteriores). De modo que, cuanto más amplio el mercado, existe mayor presencia de complementos y más intensidad tienen éstos. Sin embargo, al igual que pasaba con la dedicación, no parece que esta variable explique por sí sola unas diferencias notables en la intensidad de los complementos.

En cuanto al tipo de convenio o regulación de relación laboral, en 2006 parece haber comportamientos muy parecidos entre las empresas con convenios sectoriales o provinciales, y del mismo modo sucede con las que tienen convenios de empresa o centros de trabajo. Sin embargo, los comportamientos entre ambos grupos son claramente diferentes. Tanto la presencia como la intensidad de los complementos, parece ser mayor cuando la persona tiene

una relación laboral regulada por convenios de empresa o centro de trabajo, que cuando es sectorial o provincial. La única excepción es el pago extraordinario fijo anual, que se mantiene en torno al 13% en todos los casos. Además, aunque los efectos de tener convenio sectorial o provincial, en todas las componentes de compensación, suelen estar en el mismo orden de magnitud, el sentido de la diferencia de medias no siempre es el mismo. Para posteriores análisis sería interesante agrupar las categorías de convenio de empresa y centro de trabajo (dadas las similitudes de los procedimientos de creación de estos convenios y los efectos similares respecto a las componentes salariales).

Por último, el nivel de estudios de la persona también parece estar asociado a diferencias de medias en la presencia o intensidad del componente salarial. En algunos casos, como los pagos extraordinarios anuales, cuanto mayor sea el nivel de estudios existirá más presencia e intensidad del complemento. En otros, como turnicidad u horas extra, los picos se presentan en personas con estudios básicos, seguidos de las personas con ciclos formativos (antigua formación profesional) y las que menos son las personas con titulación universitaria. Atendiendo a las pautas de efecto sobre las componentes de remuneración, y a las similitudes conceptuales, sería conveniente agrupar las categorías de esta variable en 5 categorías (sin estudios, enseñanza obligatoria (primaria+secundaria1), secundaria2, ciclos formativos y universidad)

No obstante, es necesario resaltar que los resultados presentados hasta el momento son una parte del proceso de análisis. En ellos no hemos tenido en cuenta los efectos solapados de las diferentes variables. Por ejemplo, es posible que las personas de un sexo estén más concentradas en un tipo de ocupaciones, sectores o tipo de empresas diferentes y que sean estas últimas variables las que expliquen la varianza de la intensidad o presencia de las componentes salariales. Queda como trabajo pendiente un análisis más completo de las condiciones que explican las diferencias en el uso o intensidad de los componentes salariales (utilizando modelos multivariantes, que nos permitan ajustar los resultados por determinadas variables y no solo bivariados como los realizados en los apartados anteriores), y analizar las encuestas recientes para ver la evolución que han tenido los programas de motivación basada en salario en los años disponibles (precrisis: 2006, crisis: 2010, postcrisis: 2014 y 2018). En estos análisis sólo podremos utilizar las variables agregadas que han tenido continuidad en las tres series de datos.

## **Conclusiones**

El trabajo realizado hasta el momento nos permite confirmar que las preguntas de investigación que planteamos son pertinentes, ya que no han sido respondidas en los artículos publicados hasta la fecha.

Es conveniente recalcar que el presente estudio es un protocolo de trabajo que marca la pauta para la posterior investigación, y por ello el análisis piloto se ha realizado únicamente con la EES 2006. Sin embargo, aunque habrá que reforzar las conclusiones analizando el resto de las series disponibles, es posible establecer a grandes rasgos algunas conclusiones. En primer lugar, podemos afirmar que tanto el grado de uso como la intensidad de los programas de

remuneración económica asociados a la motivación extrínseca son bajos. Por tanto, el grado de uso de los componentes salariales en el contexto español depende en gran medida de la estructura salarial vigente, que está ampliamente influenciada por la legislación laboral actual. Como hemos indicado en la sección de los resultados, los componentes salariales fijos son los más habituales a lo largo de la encuesta, y las gratificaciones variables afectan tan sólo al 21% de la muestra. Además, en lo que respecta a la intensidad este hecho se agrava en mayor medida, ya que el salario base domina la parte principal del salario, mientras que los complementos variables representan una parte marginal del éste. De hecho, la baja incidencia de este tipo de programas ha provocado que en las series sucesivas de la encuesta salarial no se haya considerado necesario desglosar los componentes salariales variables.

Por otro lado, los análisis indican asimismo la existencia de una serie de factores que pueden influir en la presencia o no de los complementos variables. Así pues, existen diferencias entre empleados de empresas públicas y privadas, entre trabajadores con contrato indefinido y parcial, entre centros de trabajo pequeños y medianos-grandes, entre personas con dedicación a tiempo completo y a tiempo parcial, en función del alcance del mercado (local, nacional o internacional) o en función del nivel educativo de los trabajadores.

Una limitación de la encuesta de estructura salarial es que los diferentes programas de participación económica están agrupados en una única variable de la encuesta, lo que limita la posibilidad de análisis. En la revisión de la literatura, hemos encontrado que muchos estudios utilizan los datos de diferentes series de la EES del INE. Sin embargo, algunos autores utilizan otras fuentes de información, como por ejemplo la muestra continua de vidas laborales (MCVL) (Arranz Muñoz & García Serrano, 2014; Clemente et al., 2012; Messina et al., 2010) o la “European community household panel” (ECHP) (Budría & Moro-Egido, 2008; Navarro-Gómez & Rueda-Narvaez, 2015; Peraita, 2005). Esto abre una posible línea de investigación futura, ya que quizás dichas fuentes puedan ayudarnos a esclarecer nuestras preguntas de investigación.

Otra limitación importante es que el estudio utiliza únicamente datos oficiales proporcionados por el registros de nóminas de las empresas. Por tanto, no tiene en cuenta la posible existencia de valores no oficiales. A modo de ejemplo, un estudio del servicio estadístico de la dirección de empleo, asuntos sociales e inclusión de la comisión europea indica que el 8,8% de la fuerza laboral española opera en el marco del trabajo no declarado (Williams et al., 2017). Esto podría suponer, por ejemplo, que la intensidad de horas extraordinarias fuera superior a los resultados obtenidos en nuestro análisis.

Con respecto a las contribuciones del estudio, consideramos que es interesante tanto a nivel académico como profesional. Por un lado, podremos conocer si otras muestras recogidas a través de estudios académicos son representativas, ya que la incidencia y grado de utilización de los programas de participación económica debería arrojar resultados similares. Por otro lado, a nivel profesional será interesante conocer el resumen de los resultados e identificar las variables de ajuste que influyen en la composición de la distribución salarial.

El plan de trabajo previsto esta resumido en la **Tabla 5**

Tabla 5.- Plan de trabajo

<b>Tarea</b>	<b>Completado</b>
Fusionar archivos de datos (diferentes series estadísticas)	Junio 2019
Análisis estadístico previo	Julio 2019
Presentación de resultados (Congreso ACEDE)	Junio 2019
Ajuste y análisis estadístico definitivo	Septiembre 2019
Realización del artículo de investigación	Octubre 2019
Solicitud de publicación en revista científica	Noviembre 2019

Fuente de elaboración propia

### **Agradecimientos**

Este trabajo se ha realizado sin financiación.

Los autores declaran que no tienen ningún conflicto de intereses con los resultados de la investigación.

Ambos autores han participado activamente y de manera parecida en todas las etapas de la investigación.

Los dos autores han leído y aprobado el documento final.

## Anexos

Tabla 6.- Resumen de diferencias de medias (ANOVA). Tipo de control de la empresa, género y Duración de contrato

		N	LB95%	UB95%		N	LB95%	UB95%		N	LB95%	UB95%
intSALBASE	Public	18347	,5846	,5915	Man	143644	,7034	,7056	indefinido	172649	,7199	,7219
	Private	216925	,7468	,7485	Woman	91628	,7821	,7847	Determinado	62623	,7731	,7763
intPHEXTRA	Public	18347	,0046	,0055	Man	143644	,0095	,0099	indefinido	172649	,0073	,0077
	Private	216925	,0073	,0076	Woman	91628	,0032	,0035	Determinado	62623	,0063	,0069
intCOMSALTT	Public	18347	,0376	,0402	Man	143644	,0171	,0177	indefinido	172649	,0153	,0158
	Private	216925	,0134	,0138	Woman	91628	,0123	,0129	Determinado	62623	,0152	,0161
intCOMSALV	Public	18347	,0343	,0371	Man	143644	,0695	,0709	indefinido	172649	,0560	,0572
	Private	216925	,0569	,0579	Woman	91628	,0324	,0335	Determinado	62623	,0522	,0540
intCOMSALotFIJ	Public	18347	,3289	,3357	Man	143644	,1971	,1992	indefinido	172649	,1985	,2004
	Private	216925	,1732	,1747	Woman	91628	,1665	,1689	Determinado	62623	,1486	,1514
intPEXTRAAF	Public	18347	,1073	,1090	Man	143644	,1297	,1305	indefinido	172649	,1353	,1360
	Private	216925	,1305	,1311	Woman	91628	,1269	,1279	Determinado	62623	,1103	,1113
intPEXTRAAV	Public	18347	,0152	,0163	Man	143644	,0195	,0201	indefinido	172649	,0198	,0204
	Private	216925	,0178	,0182	Woman	91628	,0144	,0150	Determinado	62623	,0112	,0119
intVESP	Public	18347	,0011	,0014	Man	143644	,0024	,0026	indefinido	172649	,0027	,0028
	Private	216925	,0023	,0024	Woman	91628	,0019	,0021	Determinado	62623	,0009	,0011
dicPHEXTRA	Public	18347	,0453	,0515	Man	143644	,0877	,0907	indefinido	172649	,0679	,0703
	Private	216925	,0665	,0686	Woman	91628	,0287	,0309	Determinado	62623	,0558	,0595
dicCOMSALTT	Public	18347	,2950	,3083	Man	143644	,1608	,1646	indefinido	172649	,1538	,1573
	Private	216925	,1370	,1399	Woman	91628	,1309	,1353	Determinado	62623	,1363	,1417
dicCOMSALV	Public	18347	,2127	,2247	Man	143644	,3346	,3394	indefinido	172649	,2897	,2940
	Private	216925	,2908	,2946	Woman	91628	,2058	,2110	Determinado	62623	,2699	,2769
dicCOMSALotFIJ	Public	18347	,8353	,8459	Man	143644	,7669	,7712	indefinido	172649	,7796	,7835
	Private	216925	,7371	,7408	Woman	91628	,7091	,7150	Determinado	62623	,6474	,6549
dicPEXTRAAF	Public	18347	,8999	,9084	Man	143644	,9017	,9048	indefinido	172649	,9082	,9109
	Private	216925	,8902	,8929	Woman	91628	,8736	,8779	Determinado	62623	,8428	,8485
dicPEXTRAAV	Public	18347	,3405	,3542	Man	143644	,2166	,2209	indefinido	172649	,2350	,2390
	Private	216925	,1982	,2016	Woman	91628	,1973	,2025	Determinado	62623	,1380	,1434
dicVESP	Public	18347	,0989	,1077	Man	143644	,1261	,1296	indefinido	172649	,1410	,1443
	Private	216925	,1144	,1171	Woman	91628	,0925	,0963	Determinado	62623	,0365	,0395

95% Confidence Interval for Mean. (LB95%) Lower Bound (UB95%)Upper Bound

Tabla 7.- Resumen de diferencias de medias (ANOVA). Tamaño del centro de trabajo y dedicación del empleado

		N	LB95%	UB95%		N	LB95%	UB95%
intSALBASE	1-49	89194	,7769	,7795	Completa	200881	,7201	,7220
	50-199	64864	,7238	,7271	Tiempo Parcial	34391	,8159	,8199
	>200	79824	,6951	,6982	Total	235272	,7343	,7361
intPHEXTRA	1-49	89194	,0032	,0035	Completa	200881	,0077	,0081



	50-199	64864	,0085	,0091	Tiempo Parcial	34391	,0030	,0036
	>200	79824	,0100	,0106	Total	235272	,0071	,0074
intCOMSALTT	1-49	89194	,0054	,0058	Completa	200881	,0161	,0165
	50-199	64864	,0152	,0160	Tiempo Parcial	34391	,0106	,0117
	>200	79824	,0256	,0265	Total	235272	,0153	,0158
intCOMSALV	1-49	89194	,0494	,0510	Completa	200881	,0590	,0601
	50-199	64864	,0624	,0644	Tiempo Parcial	34391	,0319	,0339
	>200	79824	,0543	,0560	Total	235272	,0552	,0562
intCOMSALotFIJ	1-49	89194	,1615	,1639	Completa	200881	,1943	,1960
	50-199	64864	,1852	,1882	Tiempo Parcial	34391	,1329	,1365
	>200	79824	,2104	,2133	Total	235272	,1855	,1871
intPEXTRAAF	1-49	89194	,1279	,1289	Completa	200881	,1313	,1319
	50-199	64864	,1282	,1293	Tiempo Parcial	34391	,1133	,1149
	>200	79824	,1294	,1304	Total	235272	,1288	,1293
intPEXTRAAV	1-49	89194	,0129	,0136	Completa	200881	,0187	,0191
	50-199	64864	,0183	,0192	Tiempo Parcial	34391	,0110	,0119
	>200	79824	,0217	,0225	Total	235272	,0176	,0180
intVESP	1-49	89194	,0015	,0017	Completa	200881	,0024	,0025
	50-199	64864	,0018	,0020	Tiempo Parcial	34391	,0014	,0016
	>200	79824	,0033	,0035	Total	235272	,0022	,0024
dicPHEXTRA	1-49	89194	,0312	,0335	Completa	200881	,0722	,0745
	50-199	64864	,0800	,0842	Tiempo Parcial	34391	,0217	,0249
	>200	79824	,0884	,0924	Total	235272	,0651	,0671
dicCOMSALTT	1-49	89194	,0538	,0568	Completa	200881	,1549	,1581
	50-199	64864	,1526	,1582	Tiempo Parcial	34391	,1162	,1231
	>200	79824	,2492	,2552	Total	235272	,1497	,1526
dicCOMSALV	1-49	89194	,2450	,2507	Completa	200881	,2997	,3037
	50-199	64864	,3167	,3238	Tiempo Parcial	34391	,1963	,2047
	>200	79824	,2996	,3059	Total	235272	,2851	,2887
dicCOMSALotFIJ	1-49	89194	,7185	,7244	Completa	200881	,7624	,7661
	50-199	64864	,7568	,7634	Tiempo Parcial	34391	,6401	,6503
	>200	79824	,7614	,7673	Total	235272	,7451	,7486
dicPEXTRAAF	1-49	89194	,8767	,8810	Completa	200881	,9059	,9085
	50-199	64864	,9010	,9055	Tiempo Parcial	34391	,8025	,8109
	>200	79824	,8965	,9007	Total	235272	,8913	,8938
dicPEXTRAAV	1-49	89194	,1225	,1269	Completa	200881	,2227	,2263
	50-199	64864	,2069	,2132	Tiempo Parcial	34391	,1311	,1384
	>200	79824	,3064	,3128	Total	235272	,2097	,2130
dicVESP	1-49	89194	,0475	,0503	Completa	200881	,1233	,1262
	50-199	64864	,0987	,1033	Tiempo Parcial	34391	,0543	,0592
	>200	79824	,1974	,2029	Total	235272	,1135	,1161

Tabla 8.- Resumen de diferencias de medias (ANOVA). Mercado y tipo de regulación de relaciones laborales

		N	LB95%	UB95%		N	LB95%	UB95%
intSALBASE	Local	103926	,7482	,7508	Sector	86502	,7514	,7541
	National	95245	,7263	,7291	Province	102870	,7399	,7425
	EU	16453	,7285	,7351	Enterprise	41157	,6852	,6896
	World	19648	,6959	,7021	Work Center	4083	,6804	,6945
	Total	235272	,7343	,7361	Other	660	,7600	,7973
intPHEXTRA	Local	103926	,0049	,0053	Sector	86502	,0065	,0070
	National	95245	,0072	,0077	Province	102870	,0056	,0060
	EU	16453	,0135	,0151	Enterprise	41157	,0108	,0116
	World	19648	,0109	,0122	Work Center	4083	,0120	,0151
	Total	235272	,0071	,0074	Other	660	,0005	,0032
intCOMSALTT	Local	103926	,0126	,0133	Sector	86502	,0113	,0119
	National	95245	,0138	,0144	Province	102870	,0121	,0127

	EU	16453	,0227	,0245	Enterprise	41157	,0293	,0307
	World	19648	,0284	,0305	Work Center	4083	,0318	,0361
	Total	235272	,0153	,0158	Other	660	,0100	,0182
intCOMSALV	Local	103926	,0476	,0490	Sector	86502	,0458	,0473
	National	95245	,0611	,0628	Province	102870	,0596	,0611
	EU	16453	,0619	,0657	Enterprise	41157	,0620	,0645
	World	19648	,0560	,0593	Work Center	4083	,0547	,0620
	Total	235272	,0552	,0562	Other	660	,0344	,0542
intCOMSALotFIJ	Local	103926	,1830	,1853	Sector	86502	,1811	,1836
	National	95245	,1875	,1900	Province	102870	,1790	,1814
	EU	16453	,1635	,1694	Enterprise	41157	,2062	,2102
	World	19648	,1995	,2053	Work Center	4083	,2002	,2132
	Total	235272	,1855	,1871	Other	660	,1448	,1775
intPEXTRAAF	Local	103926	,1270	,1279	Sector	86502	,1302	,1313
	National	95245	,1304	,1314	Province	102870	,1256	,1264
	EU	16453	,1231	,1251	Enterprise	41157	,1321	,1334
	World	19648	,1317	,1336	Work Center	4083	,1368	,1405
	Total	235272	,1288	,1293	Other	660	,0853	,0954
intPEXTRAAV	Local	103926	,0122	,0128	Sector	86502	,0201	,0208
	National	95245	,0210	,0217	Province	102870	,0142	,0148
	EU	16453	,0184	,0201	Enterprise	41157	,0199	,0209
	World	19648	,0269	,0286	Work Center	4083	,0187	,0217
	Total	235272	,0176	,0180	Other	660	,0167	,0240
intVESP	Local	103926	,0012	,0013	Sector	86502	,0031	,0033
	National	95245	,0030	,0032	Province	102870	,0012	,0014
	EU	16453	,0027	,0031	Enterprise	41157	,0028	,0030
	World	19648	,0031	,0035	Work Center	4083	,0027	,0035
	Total	235272	,0022	,0024	Other	660	,0006	,0019
dicPEXTRA	Local	103926	,0447	,0472	Sector	86502	,0543	,0574
	National	95245	,0678	,0711	Province	102870	,0543	,0571
	EU	16453	,1204	,1306	Enterprise	41157	,1061	,1121
	World	19648	,1018	,1104	Work Center	4083	,1060	,1257
	Total	235272	,0651	,0671	Other	660	,0125	,0360
dicCOMSALTT	Local	103926	,1174	,1213	Sector	86502	,1240	,1284
	National	95245	,1499	,1545	Province	102870	,1109	,1148
	EU	16453	,2248	,2376	Enterprise	41157	,2795	,2882
	World	19648	,2410	,2530	Work Center	4083	,2959	,3243
	Total	235272	,1497	,1526	Other	660	,1143	,1675
dicCOMSALV	Local	103926	,2445	,2497	Sector	86502	,2467	,2524
	National	95245	,3042	,3101	Province	102870	,2919	,2975
	EU	16453	,3555	,3702	Enterprise	41157	,3377	,3469
	World	19648	,3291	,3423	Work Center	4083	,3295	,3587
	Total	235272	,2851	,2887	Other	660	,1382	,1952
dicCOMSALotFIJ	Local	103926	,7391	,7444	Sector	86502	,7367	,7426
	National	95245	,7479	,7534	Province	102870	,7368	,7422
	EU	16453	,7276	,7411	Enterprise	41157	,7756	,7836
	World	19648	,7600	,7719	Work Center	4083	,7711	,7964
	Total	235272	,7451	,7486	Other	660	,5303	,6061
dicPEXTRAAF	Local	103926	,8885	,8923	Sector	86502	,8701	,8746
	National	95245	,8906	,8945	Province	102870	,8974	,9010
	EU	16453	,8900	,8994	Enterprise	41157	,9130	,9183
	World	19648	,8973	,9057	Work Center	4083	,9382	,9521
	Total	235272	,8913	,8938	Other	660	,6948	,7628
dicPEXTRAAV	Local	103926	,1454	,1497	Sector	86502	,2238	,2293
	National	95245	,2485	,2540	Province	102870	,1560	,1604
	EU	16453	,2231	,2359	Enterprise	41157	,2966	,3055
	World	19648	,3338	,3471	Work Center	4083	,3087	,3374

	Total	235272	,2097	,2130	Other	660	,2024	,2673
dicVESP	Local	103926	,0453	,0478	Sector	86502	,1396	,1442
	National	95245	,1587	,1634	Province	102870	,0461	,0487
	EU	16453	,1466	,1576	Enterprise	41157	,2074	,2153
	World	19648	,2146	,2262	Work Center	4083	,2638	,2912
	Total	235272	,1135	,1161	Other	660	,0283	,0596

Tabla 9.- Resumen de diferencias de medias (ANOVA). Nivel de estudios

		N	LB95%	UB95%
intSALBASE	Sin estudios	13494	,7774	,7839
	primaria	45310	,7439	,7478
	Secundaria 1	60262	,7484	,7517
	Secundaria2	25412	,7223	,7277
	FP1	16735	,7255	,7320
	FP6	22067	,7252	,7308
	Universidad1	21880	,7055	,7115
	Universidad2	30112	,7032	,7087
	Total	235272	,7343	,7361
intPHEXTRA	Sin estudios	13494	,0054	,0066
	primaria	45310	,0091	,0099
	Secundaria 1	60262	,0093	,0100
	Secundaria2	25412	,0051	,0058
	FP1	16735	,0083	,0096
	FP6	22067	,0085	,0095
	Universidad1	21880	,0027	,0034
	Universidad2	30112	,0018	,0022
	Total	235272	,0071	,0074
intCOMSALTT	Sin estudios	13494	,0080	,0093
	primaria	45310	,0145	,0154
	Secundaria 1	60262	,0151	,0159
	Secundaria2	25412	,0126	,0138
	FP1	16735	,0231	,0250
	FP6	22067	,0205	,0221
	Universidad1	21880	,0146	,0161
	Universidad2	30112	,0122	,0136
	Total	235272	,0153	,0158
intCOMSALV	Sin estudios	13494	,0540	,0582
	primaria	45310	,0647	,0672
	Secundaria 1	60262	,0636	,0656
	Secundaria2	25412	,0543	,0573
	FP1	16735	,0561	,0597
	FP6	22067	,0523	,0554
	Universidad1	21880	,0364	,0393
	Universidad2	30112	,0341	,0365
	Total	235272	,0552	,0562
intCOMSALotFIJ	Sin estudios	13494	,1458	,1513
	primaria	45310	,1621	,1654
	Secundaria 1	60262	,1588	,1616
	Secundaria2	25412	,1981	,2031
	FP1	16735	,1774	,1833
	FP6	22067	,1853	,1904
	Universidad1	21880	,2324	,2382
	Universidad2	30112	,2413	,2465
	Total	235272	,1855	,1871
intPEXTRAAF	Sin estudios	13494	,1226	,1250
	primaria	45310	,1245	,1257

	Secundaria 1	60262	,1256	,1267
	Secundaria2	25412	,1364	,1383
	FP1	16735	,1279	,1298
	FP6	22067	,1318	,1335
	Universidad1	21880	,1294	,1313
	Universidad2	30112	,1318	,1335
	Total	235272	,1288	,1293
intPEXTRAAV	Sin estudios	13494	,0090	,0104
	primaria	45310	,0126	,0135
	Secundaria 1	60262	,0143	,0151
	Secundaria2	25412	,0227	,0242
	FP1	16735	,0150	,0164
	FP6	22067	,0174	,0187
	Universidad1	21880	,0203	,0217
	Universidad2	30112	,0281	,0295
	Total	235272	,0176	,0180
intVESP	Sin estudios	13494	,0008	,0012
	primaria	45310	,0013	,0016
	Secundaria 1	60262	,0012	,0014
	Secundaria2	25412	,0030	,0033
	FP1	16735	,0017	,0021
	FP6	22067	,0022	,0025
	Universidad1	21880	,0025	,0029
	Universidad2	30112	,0050	,0055
	Total	235272	,0022	,0024
dicPHEXTRA	Sin estudios	13494	,0486	,0562
	primaria	45310	,0823	,0874
	Secundaria 1	60262	,0840	,0884
	Secundaria2	25412	,0482	,0536
	FP1	16735	,0799	,0883
	FP6	22067	,0868	,0944
	Universidad1	21880	,0240	,0283
	Universidad2	30112	,0159	,0188
	Total	235272	,0651	,0671
dicCOMSALTT	Sin estudios	13494	,0859	,0956
	primaria	45310	,1548	,1616
	Secundaria 1	60262	,1637	,1696
	Secundaria2	25412	,1444	,1532
	FP1	16735	,2269	,2398
	FP6	22067	,1853	,1957
	Universidad1	21880	,1276	,1366
	Universidad2	30112	,0748	,0809
	Total	235272	,1497	,1526
dicCOMSALV	Sin estudios	13494	,2739	,2891
	primaria	45310	,3292	,3379
	Secundaria 1	60262	,3319	,3394
	Secundaria2	25412	,2765	,2875
	FP1	16735	,3050	,3190
	FP6	22067	,2927	,3048
	Universidad1	21880	,1937	,2043
	Universidad2	30112	,1627	,1711
	Total	235272	,2851	,2887
dicCOMSALotFIJ	Sin estudios	13494	,7061	,7214
	primaria	45310	,7280	,7362
	Secundaria 1	60262	,7332	,7402
	Secundaria2	25412	,7512	,7617
	FP1	16735	,7388	,7520

	FP6	22067	,7593	,7705
	Universidad1	21880	,7690	,7800
	Universidad2	30112	,7587	,7683
	Total	235272	,7451	,7486
dicPEXTRAAF	Sin estudios	13494	,8412	,8533
	primaria	45310	,8762	,8822
	Secundaria 1	60262	,8869	,8919
	Secundaria2	25412	,8909	,8985
	FP1	16735	,9120	,9204
	FP6	22067	,9187	,9257
	Universidad1	21880	,9025	,9102
	Universidad2	30112	,8889	,8959
	Total	235272	,8913	,8938
dicPEXTRAAV	Sin estudios	13494	,0990	,1093
	primaria	45310	,1444	,1510
	Secundaria 1	60262	,1655	,1715
	Secundaria2	25412	,2681	,2791
	FP1	16735	,2280	,2408
	FP6	22067	,2438	,2553
	Universidad1	21880	,2584	,2701
	Universidad2	30112	,3041	,3145
	Total	235272	,2097	,2130
dicVESP	Sin estudios	13494	,0327	,0390
	primaria	45310	,0691	,0739
	Secundaria 1	60262	,0693	,0734
	Secundaria2	25412	,1765	,1860
	FP1	16735	,1172	,1271
	FP6	22067	,1306	,1396
	Universidad1	21880	,1343	,1435
	Universidad2	30112	,2052	,2144
	Total	235272	,1135	,1161



Capítulo 4: What does the wage structure depend on? Evidence from the national salary survey in Spain





## ***What does the wage structure depend on? Evidence from the national salary survey in Spain***

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### **Abstract**

**Purpose:** This paper aims to assess extrinsic motivation in the Spanish labour market. We focus on evaluating whether remuneration programs have a sufficient prevalence in the Spanish context to be considered in research models. Besides, we are also interested in identifying which are the factors that might affect the adoption of those programs.

**Design/methodology/approach:** We gather the data from three waves (2006, 2010, and 2014) of the salary structure survey (EES) conducted by the Spanish National Institute of Statistics (INE). We use Descriptive Statistics for identifying the incidence and intensity of remuneration programs in the Spanish context. We use the Generalized Linear Model (GLM) for exploring which factors are affecting the implementation of remuneration programs.

**Findings:** Our results show that both degree of use and intensity of remuneration programs related to extrinsic motivation are low. There are not important differences between the three series of data. It seems that the rigidity of the Spanish labour legislation influences the salary structure. In this sense, the basic salary and fixed payments are the central part of the monthly gross amount. Finally, few of the factors under study have a substantial effect on the intensity of variable retribution.

**Research limitations:** Our research uses only official data provided by company payroll records and many economic participation programs are grouped into a single category within the survey, which limits the possibility of analysis. In addition, the cross-sectional nature of the data limits the possibility of establishing causal relationships.

**Practical implications:** We have concluded that remuneration programs related to extrinsic motivation are not being widely used in the Spanish context. This fact is relevant since many studies point out that employee involvement is essential for the success of organizations in the current context

**Originality/value:** The importance of the study lies in its focus on the salary structure to assess whether extrinsic motivation mechanisms are used in the Spanish labour market. We have studied the salary structure composition in Spain in a disaggregated way, focusing on variable remuneration, whereas most of the previous research considers the salary as a whole (total gross salary without dividing by retribution concepts). Also, we have identified which factors are affecting the implementation of remuneration programs. Also, we have clarified several issues related to the salary structure in Spain.

**Keywords:** Employee participation; high-performance work practices; AMO framework; Extrinsic motivation; Human resources management; remuneration; salary structure survey; INE

## Introduction

High-involvement work practices are very diverse (Perello-Marin & Ribes-Giner, 2014), ranging from simple suggestion boxes to complex programs, such as autonomous work groups providing employees with full authority to manage their tasks (Beltrán-Martín & Bou-Llusar, 2018). Frequently, high involvement practices complement each other by building systems that take advantage of synergies to improve performance (Marín-García & Conci, 2012). Some authors point out that high involvement work systems include three dimensions: skill requirements, jobs designed to use those skills, and an incentive structure to induce discretionary effort (Appelbaum et al., 2000). This system is known as the Ability-Motivation-Opportunity (AMO) framework and has been studied by using a wide range of methodologies, which provide very different results (Marín-García & Martínez-Tomas, 2016). In this research, we focus on remuneration programs associated with extrinsic motivation. Extrinsic rewards play an important role in workplaces and may increase task performance (Jiang, Lepak, Hu, et al., 2012; R. M. Ryan & Deci, 2000). Also, they encourage employees to seek out challenges at work and acquire new skills, and therefore are related also to the ability and opportunity bundles.

Motivation can be defined as the internal factors that incite to initiate and maintain a particular behaviour (James, 1989; Marín-García & Conci, 2012). Traditionally, we distinguish between intrinsic motivation, which refers to doing something for one's interest, and extrinsic motivation, which refers to doing something in exchange for a reward (Serrano-Cinca et al., 2005). Similarly, motivation practices can be classified into two groups: those related to extrinsic motivation (pay for performance, recognition, internal promotion, or job security); and those related to intrinsic motivation (such as responsibility, personal development, inner satisfaction, curiosity, or opportunity to learn) (Marín-García & Martínez-Tomas, 2016; Perello-Marin & Ribes-Giner, 2014). Nevertheless, both categories are closely related, and some authors claim that the lack of extrinsic factors can affect intrinsic motivation (Bos-Nehles et al., 2013). Also, motivation can be affected by ability, and, for instance, poorly trained employees can become demotivated if they consider that tasks are difficult (Bos-Nehles et al., 2013).

Human Resources Management (HRM) theorist point out that Human Resources practices may increase organizational performance. According to the Organisation for Economic Co-operation and Development (OCDE), the Spanish labour productivity is far from other countries such as USA, UK or northern European countries (OECD, 2019). This fact might be caused, among other reasons, to the under-utilization of key drivers for competitiveness such as extrinsic motivation. The purpose of this article is to assess whether remuneration programs have a sufficient prevalence in the Spanish context to be considered in research models or, on the contrary, they are non-existent or irrelevant. In this sense, this investigation might lead to a better understanding of the current Spanish labour market and provide some ideas to improve HRM implementation. In the literature review described in the next section, we realized that very few articles refer to flexible remuneration within the Spanish context. Bearing in mind that in previous researches there was a notable difference in the remuneration patterns in the United States, Spain, and China (Marín-García et al., 2008; C.-S. Yu et al., 2000), it is possible that specific programs typically present in the scope of Anglo-Saxon literature are not so pertinent in Spain. This may be due to differences between the Spanish and the American labour legislation or other

cultural causes. As far as this objective is concerned, it is essential to identify the incidence and intensity of compensation programs in the Spanish context. Therefore, our first research question is:

RQ1: What is the prevalence and intensity of compensation programs in the Spanish labour market?

We will use three data waves of the salary structure survey (EES) published by the National Institute of Statistics (INE) of Spain. These data series correspond to the years 2006, 2010, and 2014. The INE 2006 survey reflects variable wage supplements related to performance, while in subsequent series (2010 and 2014), those supplements are not disaggregated. This may indicate that variable complements are not relevant in the Spanish context. In this sense, our second question is the following:

RQ2: Is the low incidence of these programs in the 2006 survey the cause of the disappearance in subsequent series?

Reviewing the existing literature, we observed many articles identifying adjustment variables that affect the global salary distribution in Spain (Felgueroso et al., 2008; Ramos et al., 2014). Some studies focus on factors related to organizations, while others deal with factors related to the employees. As we did not find any article relating those factors with the implementation of remuneration programs, we attempt to fill this gap in the existing literature by identifying which might be the factors related to the adoption of those remuneration programs. Clarifying these factors might help to adapt these programs to the Spanish context. Also, understanding these factors could lead to a better understanding of the problems that organizations face when implementing high involvement practices. Hence, the third question (RQ3) will be devoted to finding out which factors are associated with the implementation of bonuses not related to shiftwork:

RQ3: What factors affect the implementation of remuneration programs?

Finally, as we analyse three data waves, we can evaluate to some extent the effect of the financial crisis on salary-based motivation programs. One limitation of this analysis is the use of cross-sectional data, which are not suitable to establish causal relationships, and only provide a picture at a given point in time. Moreover, other reasons apart from the economic situation could also affect the implementation of remuneration programs. However, as the sample is wide-ranging, and the data waves are representative of quite different economic periods, we consider that this analysis allows to know the situation of remuneration programs in each case and detect any changes in this sense. Therefore, the fourth question is the following:

RQ4: Is the implementation of remuneration programs in Spain affected by economic cycles?

The work is organized as follows: first, we carry out a review of previous literature on the subject; secondly, we set out the research design, defining the sample and the variables under study; next, we apply relevant statistical techniques to answer thoroughly the research questions raised; and finally, we state the main conclusions and possible future research.

## Conceptual framework

While reviewing the literature, we realized that few investigations aimed to study the different salary components in a disaggregated way. In fact, we did not find any article analysing the use of economic participation programs through the INE salary structure survey. Most of the authors consider salary as a whole (total gross salary without dividing by retribution concepts). In this sense, some of them study the evolution of the salary distribution over time (Carrasco et al., 2015; Murillo Huertas & Simón, 2014), while others consider several factors that could create differences among groups of the salary distribution (Hospido & Moral-Benito, 2016; Ramos et al., 2014). Besides, very few articles refer to incentives or flexible remuneration. In this sense, only one study refers to incentive systems (Dilmé Soto, 2007); another investigation ponders that implementing remuneration programs is difficult in countries with strong rigidity and centralization of labour legislation (Messina et al., 2010); while another research explores the relationship between the characteristics of boards of directors and the structure of compensation of directors in Spain (Merino & Banegas, 2011).

The following question arises: if some authors suggest that variable remuneration fosters productivity, why is the literature so scarce? Is this caused by the Spanish labour market rigidity? Is this a consequence of the low incidence of remuneration programs in Spain? Is this because economic incentives could generate problems within the organizations and non-monetary compensations schemes are preferable to foster motivation? (Pfeffer & Sutton, 2006). In this sense, as posed in RQ1, we consider that it is interesting undertaking research to figure out the use and the incidence of remuneration programs in the Spanish context. Also, this situation is related to RQ2, in which we study if variable payments are not relevant in the Spanish context.

In this literature review, many studies identify adjustment variables affecting the composition of the global salary distribution. It is valuable to consider these factors since they could also affect the salary structure and be in this way related to our investigation. This is the reason why RQ3 posed is to identify whether any of the factors that affect salaries as a whole, are also related to the incidence of economic incentives. Next, we proceed to identify these factors for using them in further statistical analyses.

On the one hand, some authors study the factors that are related to organizations. Regarding economic activity, some authors support the existence of sensible differences concerning the industry that tends to be more relevant among qualified workers (Casado Díaz & Simón, 2016). Moreover, other authors support that pays will be higher in industry or building companies than in agriculture, services, or cooperatives because firms in more competitive markets hire the most qualified workers (Clemente et al., 2012). Similarly, some studies investigate the differences in salaries between public and private organizations. In this regard, some scholars show the existence of bonuses in the public sector (Arranz Muñoz & García Serrano, 2014). However, other authors affirm that the existence of a paid bonus in the public sector is not a consequence of remunerating workers with the same characteristics, but the composition of the workforce itself and businesses features are those that determine such differences (Ramos et al., 2014). In the same vein, other studies show that these bonuses are more frequent among less qualified workers while they decrease or there is the opposite effect among qualified staff (Hospido & Moral-Benito, 2016; Ramos et al., 2014).

Many authors have also considered the impact of collective wage bargaining on the employment process. However, there is not a clear consensus in this sense. On the one hand, some scholars indicate that wage performances in Spain are strong and stable due to the presence of wage bargaining (Simón, 2009). Some studies show that due to the existence of collective bargaining there is less employment inequality in lower levels of distribution (Felgueroso et al., 2008). On the other hand, some investigations state that wage bargaining together with labour reforms are responsible for the lowering of wages in several groups of the wage distribution (Elisabet et al., 2007). Moreover, the high regulation of the market sometimes means that businesses are not able to find ways to invest in education due to the rigid structure of salaries (Peraita, 2005). In this sense, some scholars argue that higher wage flexibility would be positive for reducing unemployment (Bande & Fernández, 2011).

On the other hand, studies are claiming that variation in salaries is more devoted to inherent factors of the employees than to those related to organizations. In this sense, many investigations reveal gender differences in wages among workers (Simon et al., 2017; Simón & Murillo, 2014) that increased notably during the economic crisis (Murillo Huertas & Simón, 2014). Some other authors confirm the existence of a glass ceiling that increases gender income differences specially on the highest salaries (Antón & de Bustillo, 2015; Felgueroso et al., 2008).

Other investigations consider that higher educational level workers tend to have higher salaries if they are linked to positions that require more significant knowledge or responsibility (Arranz Muñoz & García Serrano, 2014). Nevertheless, several authors have noticed that the educational level is not a guarantee of a better salary (Budría & Moro-Egido, 2008). In this sense, some research has been done considering overeducation as an indicator of how the labour market does not make full use of the labour force and more qualified workers stay in lower positions concerning their skills resulting in a reduction of salary (Budría & Moro-Egido, 2008).

Other aspects, such as the length of service or the type of contract, are considered. Seniority is one of the factors that positively affect wages, either due to acquired experience assessment (Alcalá Agulló & Hernández Martínez, 2006) or due to the greater acquired rights of senior staff concerning new hires (Elisabet et al., 2007). On the other hand, part-time employees usually suffer from salary discrimination in comparison to full-time employees (Simon et al., 2017). This variable could be critical because it sometimes reflects on the level of commitment. Finally, other authors study the relationship between managerial positions and variable remuneration; In this group of employees, salary bonuses based on performance and stock options are commonly used (Grau-Grau & Parry, 2010). In this sense, as high managers tend to have higher gross salaries, it is important to notice that salaries grow along with variable remuneration.

Additionally, we found out some investigations talking about variations in salaries due to the financial crisis (Arranz Muñoz & García Serrano, 2014; Carrasco et al., 2015). It is interesting to know how the financial remuneration programs evolve during the economic downturn or growth. For that reason, RQ4 aims to know what happened with the economic motivation programs after the crisis. In this sense, we will study three different series of INE database: 2006 -before the crisis-, 2010 -amid the crisis- and 2014 -when some signs of recovery and stabilization were shown. We are aware of the cross-section nature of the data. Additionally, the EES does not guarantee to study the same individuals in each wave. However, we consider

that the sample is wide-ranging and representative of the population, and it might provide a representative picture of each economic period.

## **Methodology**

Our database comprises microdata from the salary structure survey (EES) published by the INE. Specifically, we employ the last three available series in the date this research was developed: 2006, 2010, and 2014. We have designed a replicable methodology that can be used with subsequent series in future research. The microdata of the series are available in the INE database, and for conducting the analysis, we have used the IBM SPSS Statistics v22 software (IBM Corp., 2013).

The EES collects data concerning both the structure and distribution of salaries. This survey is conducted every four years in the Member States of the European Union. In Spain, the survey is carried out by the INE with stratified two-stage sampling. The first stage selects works centres that are registered on the Social Security system, considering every category of the National Classification of Occupations (CNO) as an independent population. Then, CNO categories are stratified by both region and company size. In the second stage, a random sample of workers from those work centres is selected. The data is provided by the company from its payroll records. The resulting sample is more than 200.000 people in each of the surveys.

The EES includes information concerning earnings. On the one hand, it uses October as a reference month to calculate monthly payments, such as basic salary (SALBASE), earnings related to overtime (PHEXTRA), or total extraordinary payments (COMSAL). Monthly extraordinary payments include personal bonus payments (seniority or academic qualification), special payments for shift work, danger, toxicity, or physical arduousness, and variable bonuses based, for instance, on productivity or for the achievement of pre-defined objectives. The EES2006 collects total extraordinary payments (COMSAL) and differentiates the part corresponding to shift work (COMSALTT) and variable payments (COMSALV). From EES2010, only shift work is detailed. On the other hand, the EES also includes information related to payments with different periodicity than monthly payments (for instance, annual or semi-annual payments). These payments include total annual gross earnings (SALBRUTO), payments in kind (VESP), and extraordinary payments, either fixed (PEXTRAAF) such regular bonus or Christmas/holidays bonus, or variable (PEXTRAAV) such as profit-sharing bonuses or based on the achievement of the objectives. From EES2010, extraordinary annual bonuses (fixed and variable) are grouped into one category (GEXTRA).

In addition, the EES includes information concerning the local unit to which the sampled employees are attached, such as the size of the enterprise, the economic activity according to the Statistical Classifications of Economic Activities in the European Union (NACE), the type of collective wage bargaining and the principal market. Finally, it also includes information concerning each employee in the sample such as gender, age, level of education, length of service in the company, type of employment contract, supervising position, full or part-time contract, and occupation according to the CNO. Further information can be found in the Spanish

INE database (Instituto Nacional Estadística, 2017) and the research protocol (Martinez-Tomas and Marin-Garcia, 2019).

In Table 1, we sum up the compensation components that have been considered to carry out our study. In the current Spanish context, the basic wage is not viewed as a high involvement work practice, since it is usually regulated by collective or company bargaining (Marín -García & Conci, 2012). However, forms of remuneration based on collective or individual performance are considered high involvement sources, as they contribute to aligning the interests of both organizations and employees, and they are focused on improving company performance (Lawler, 1986; Marín-García & Conci, 2012).

Table 1: Relationship between EES and remuneration programs

Salary Structure Survey (EES- INE)		Remuneration programs
Basic salary (month) (SALBASE)		Basic salary (excluding bonuses)
Payments for overtime (PHEXTRA)		Payments for overtime
Monthly extraordinary payments (COMSAL)	Payments for shift work (COMSALTT)	Salary bonus based on the job
	Fixed bonus not related to shiftwork (COMSALnoTT)	Salary bonus based on the job Salary bonus based on personal skills or competences
	Variable bonus (COMSALV)	Salary bonus based on performance Salary bonus based on productivity
Extraordinary payments with different periodicity (GEXTRA)	Periodic fixed bonus (PEXTRAAF)	Regular bonus Christmas / Holidays bonus
	Variable bonus (PEXTRAAV)	Bonus based on the objective achievement Profit-sharing bonus
	Payments in kind (VESP)	Payments in kind
Type of employment contract (part or full-time job)		Job security
Unavailable in the EES		Non-financial incentives

Source: Martinez-Tomas and Marin-Garcia (2019)

Variables associated with remuneration are already adjusted in the sample. Therefore, it is not necessary to consider both the length of the employment relationship or special days affecting the payroll. However, we need to create new variables which will be necessary for successive analysis. Firstly, we proceed to calculate the monthly gross salary amount as:

- $SALOCTBR = SALBASE + PHEXTRA + COMSAL$  (October is the reference month, excluding the pro-rated amount of the annual Christmas and Holiday bonus)

In the 2010 and 2014 series, extra annual bonuses (GEXTRA) and other monthly special payments (COMSAL) are not divided between fixed and variable bonuses (except for special payments for shift work), as they are in the 2006 series. To standardize the analysis process among the three series, in the 2006 series we have proceeded as follows:

- $GEXTRA = PEXTRAAF + PEXTRAAV$
- $COMSAL_{lotFIJ} = COMSAL - COMSALTT - COMSALV$

In all data series, it is possible to calculate special payments not devoted to shiftwork (COMSALnoTT), by deducting them from the total amount:

- $COMSAL_{noTT} = COMSAL - COMSALTT$

We also need to calculate both the incidence and intensity of remuneration programs. Intensity is defined as the percentage of each salary concept with respect to the monthly gross salary. For

studying the incidence, we create several dichotomous variables that indicate the presence or absence of remuneration components under study; values bigger than 0 indicate the presence of those components (further information can be found in Annex 1). As a matter of fact, the intensity and the incidence of special payment not devoted to shiftwork (intCOMSALnoTT) are calculated as follows:

- $\text{intCOMSALnoTT} = \text{COMSALnoTT} / \text{SALOCTBR}$
- $\text{dicCOMSALnoTT} = \text{COMSALnoTT} > 0$

We analyse the whole sample. Since we are interested in relative values over the total remuneration, full or part-time employees, do not distort results. The same applies to the type of contract. However, we could use both variables to explain possible differences.

Both CNO and NACE are used as adjustment variables, if we have enough data in each stratum of the sampling. For that reason, we have recoded these variables, taking into consideration the categories proposed in the European Working Conditions Survey (EWCS) ((INSHT), 2017), reflected in Annex 2 (Tables a and b). In addition, intending to have a larger sample in each of the strata, we have recoded the CNO variable again from EWCS to categories proposed by other authors (Toch et al., 2014), which are reflected in Annex 2 (Table c). Those new variables are entitled as CNACerecodnumEWCS and CNOrecodTOCH.

For answering our first research question (RQ1), we analyse the percentage of people having variable remuneration components. In addition, we also analyse the descriptive statistics of the percentage of remuneration components over the total gross salary. These analyses allow us also to answer our second research question (RQ2). The SPSS syntax of descriptive statistics can be found in Annex 1.

Our third research question (RQ3) aims to identify which factors are affecting the implementation of remuneration programs. As the data do not follow a normal pattern, we use a generalized linear model (GLM). GLM is a flexible generalization of ordinary linear regression that allows for the response variable to have an error distribution other than the normal distribution. The relationship is encoded in the link function. Moreover, GLM is a useful framework for comparing how several variables affect different continuous variables (Rutherford, 2001). For determining each factor's effect independently, we must compare each factor one-by-one. In this sense, the GLM allows studying each factor by maintaining the other factors in the reporting category.

As extraordinary payments are not divided between fixed and variable (except for the 2006 series), we study the effects of several variables over special payments not devoted to shiftwork (intCOMSALnoTT). In the GLM analysis, SPSS software excludes those cases in which the dependent variable is equal to zero. Hence, we have created a new variable adding 0.00001 for avoiding this circumstance without affecting the results:

The adjustment factors chosen for the analysis are the following: CNO, NACE, gender, responsibility, level of education, type of contract, and regulation by agreement. These variables are discrete. In addition, we will use two continuous variables: seniority and the gross pay for the reference month (October), as they could also influence the presence of remuneration programs. From these two variables, we have created new ones for facilitating the



comprehension of the results. The reason for doing so is for having continuous variables in a similar range of values. Thus, we have proceeded as follows:

- $\text{antigu10} = \text{antigu}/10$
- $\text{SALOCTBR1K} = \text{SALOCTBR}/1000$

We have used a Gamma distribution with a log link function. The GLM SPSS syntax can be found in Annex 4.

Our fourth research (RQ4) question aims to explore whether the implementation of remuneration programs in Spain is affected by economic cycles. In this sense, we compare the statistical results of three data waves (2006, 2010, 2014) which give a representative picture of very different economic situations in Spain.

## Results and discussion

Concerning the incidence and the intensity of remuneration programs (RQ1), a comparative summary is shown in Table 2 (further information in Annex 5).

Table 2.- Comparative EES 2006-2014

Variable	2006 % of people <sup>a</sup>	2010 % of people <sup>a</sup>	2014 % of people <sup>a</sup>	2006 mean <sup>b</sup>	2010 mean <sup>b</sup>	2014 mean <sup>b</sup>
SALBASE	100.00	100.00	100.00	73.52	72.72	73.94
PHEXTRA	6.61	5.27	3.97	00.72	00.59	0.39
COMSAL	84.43	80.31	79.98	25.76	26.69	25.68
COMSALTT	15.11	15.81	14.62	01.56	1.55	1.37
COMSALnoTT	82.88	79.08	79.13	24.20	25.13	24.31
GEXTRA	90.44	76.08	75.21	14.69	11.84	11.45
VESP	11.48	15.70	20.99	00.23	0.28	0.33

SALBASE: basic salary; PHEXTRA: earnings-related to overtime; COMSAL: total extraordinary monthly payments; COMSALTT: extraordinary payments related to shiftwork; COMSALnoTT: extraordinary payments not related to shiftwork; GEXTRA: extraordinary annual bonuses (fixed and variable); VESP: payments in kind  
<sup>a</sup>Percentage of people having remuneration components  
<sup>b</sup>intensity of the compensation components (% over the total salary)

Regarding monthly payments, the most frequent components are bonuses not related to shiftwork (83% of the sampling in 2006; 79% in both 2010 and 2014). Next, fixed supplements related to shiftwork are placed. Overtime payments affect only a little part of the sample. Concerning the annual salary, extraordinary payments (including both fixed and variable amounts) stand out. Payments in kind are much smaller. Regarding the intensity, in the three series, basic salary is the central part of the wage, followed by bonuses not related to shiftwork, and extraordinary annual payments. Supplements related to shift work, overtime payments, and payment in kind represent an insignificant part of the total salary. In this sense, our results are consistent with prior evidence demonstrating the rigidity of the wage-setting mechanisms in Spain (Martínez Matute, 2016; Moral Arce & Maza Fernández, 2010).

In the 2010 and 2014 series, extra annual bonuses (GEXTRA) and special monthly payments (COMSAL) are not divided between fixed and variable bonuses (except for special payments for shift work), as they are in the 2006 series. For that reason, it is impossible to estimate which part of them is related to variable bonuses. However, as both the incidence and intensity of each

variable are similar within the three series, we analyse the 2006 series in detail for estimating those percentages (Table 3).

Table 3.- EES 2006

Variable	people <sup>a</sup>	Mean <sup>b</sup>
SALBASE	1.0000	.7352
PHEXTRA	.0661	.0072
COMSAL	.8443	.2576
▪ COMSALTT	.1511	.0156
▪ COMSALV	.2869	.0557
▪ COMSALotFIJ	.7469	.1863
COMSALnoTT	.8288	.2420
GEXTRA	.9044	.1469
▪ PEXTRA AF	.8925	.1291
▪ PEXTRA AV	.2114	.0178
VESP	.1148	.0023

SALBASE: basic salary; PHEXTRA: earnings related to overtime; COMSAL: total extraordinary monthly payments; COMSALTT: extraordinary payments related to shiftwork; COMSALV: Variable supplements; COMSALotFIJ: fixed bonuses not related to shiftwork; COMSALnoTT: extraordinary payments not related to shiftwork; GEXTRA: extraordinary annual bonuses; PEXTRA AF; extraordinary annual bonuses (fixed); PEXTRA AV: extraordinary annual bonuses (variable); VESP: payments in kind

<sup>a</sup>Parts per unit of people having remuneration components  
<sup>b</sup>intensity of the compensation components (parts per unit over the total salary)

Concerning monthly payments, in the EES2006, variable supplements affect 29% of the sample. Regarding the annual salary, periodic fixed bonuses stand out, and variable bonuses affect only 21% of the sample. Concerning the intensity, both monthly variable bonuses and extraordinary variable payments represent only 5.5% and 1.8%, respectively, over the total salary. These results confirm the low incidence of variable remuneration in the 2006 survey. This fact allows us to answer RQ1: the low incidence of variable remuneration programs in the 2006 survey might be the cause of not having disaggregated variables in the 2010 and subsequent series. An explanation for the low incidence of variable remuneration could be twofold. On the one hand, some authors point out that extrinsic factors such as economic rewards usually lead to a focus on short-term gains, whereas intrinsic motivation is usually linked with an employee's long-term commitment (Schimansky, 2014). In the same vein, other authors consider that commitment is related more strongly to internal sources of motivation (Beltrán-Martín & Bou-Llusar, 2018). Therefore, external motivation-enhancing practices, such as variable remuneration, could be considered minor issues. On the other hand, the rigidity of the Spanish collective bargaining system prevents wages from being adapted to the specific conditions of each company and leads to the homogenization of wages (Martínez Matute, 2016).

RQ3 focuses on identifying which conditions (company or personal factors) are associated with greater use of bonuses not related to shiftwork. In Table 4, we present the categorical variable information concerning the three datasets. As we can see, the employment conditions are different in 2006 with respect to 2010 and 2014 (Marin-Garcia et al., 2020). We also present information concerning continuous variables of the three series (Annex 2: Table d (2006), Table e (2010), and Table f (2014)).

Table 4.- Categorical variable information EES 2006-2014

Variable		EES_2006		EES_2010		EES_2014	
		N	Percent	N	Percent	N	Percent
SEXOdic (Gender)	0 man	143644	61.1%	123657	57.0%	119872	57.3%
	1 woman	91628	38.9%	93112	43.0%	89490	42.7%
	Total	235272	100.0%	216769	100.0%	209362	100.0%
RESPONSA (Supervising position)	1 yes	43674	18.6%	175804	81.1%	175437	83.8%
	0 no	191598	81.4%	40965	18.9%	33925	16.2%
	Total	235272	100.0%	216769	100.0%	209362	100.0%
TIPOCON (Type of employment contract)	1 full-time	172649	73.4%	167416	77.2%	166393	79.5%
	2 part-time	62623	26.6%	49353	22.8%	42969	20.5%
	Total	235272	100.0%	216769	100.0%	209362	100.0%
CNACerecodnumEWCS (Economic activity 6°EWCS)	2 Industry	90839	38.6%	60877	28.1%	59222	28.3%
	3 Construction	18304	7.8%	14167	6.5%	12900	6.2%
	4 Trade and hospitality	34781	14.8%	25050	11.6%	24764	11.8%
	5 Transportation	14535	6.2%	11445	5.3%	10891	5.2%
	6 Administrative, auxiliar and financial activities	11047	4.7%	11286	5.2%	10764	5.1%
	7 Public administration and defence	*No data available	*No data available	10018	4.6%	9454	4.5%
	8 Education	12363	5.3%	6747	3.1%	6969	3.3%
	9 Healthcare	16976	7.2%	18106	8.4%	17200	8.2%
	10 Other services	36427	15.5%	59073	27.3%	57198	27.3%
	Total	235272	100.0%	216769	100.0%	209362	100.0%
CNOrecodTOCH (Occupation according to NCO)	1 I Higher Controllers	6307	2.7%	7389	3.4%	6997	3.3%
	2 II Lower controllers	25206	10.7%	34902	16.1%	36217	17.3%
	3 III Routine non-manual employees	90062	38.3%	99357	45.8%	94775	45.3%
	5 V Skilled manual workers	80584	34.3%	50242	23.2%	49342	23.6%
	6 VI Semi and unskilled manual workers	33113	14.1%	24879	11.5%	22031	10.5%
	Total	235272	100.0%	216769	100.0%	209362	100.0%
REGULACION3k (Type of collective wage bargaining)	1 National collective agreement	86502	36.8%	64598	29.8%	62736	30.0%
	2 Sectoral or regional agreements	102870	43.7%	77045	35.5%	74985	35.8%
	3 Company agreements	45900	19.5%	75126	34.7%	71641	34.2%
	Total	235272	100.0%	216769	100.0%	209362	100.0%
ESTUrecodnum (Level of education)	1 Basic studies	144478	61.4%	115232	53.2%	128037	61.2%
	2 Vocational training	38802	16.5%	41436	19.1%	19170	9.2%
	3 University	51992	22.1%	60101	27.7%	62155	29.7%
	Total	235272	100.0%	216769	100.0%	209362	100.0%
SEXOdic: gender; RESPONSA: supervising position; TIPOCON: type of employment contract; CNACerecodnumEWCS: economic activity (EWCS); CNOrecodTOCH: occupation according to NCO; REGULACION3k: type of collective wage bargaining; ESTUrecodnum: level of education							

As we stated in the methods section, we have used a generalized linear model. The dependent variable is the intensity of special payments not devoted to shiftwork. A comparative summary of results is presented in Table 5. Also, results are summarized in the chart given in Figure 1, which is found at the end of this section. More detailed information on the results can be found in Annex6.

Table 5.- Intensity of special payments not devoted to shiftwork. Comparative EES 2006-2014

Parameter	Variable	EES 2006 Exp(B)	EES 2010 Exp(B)	EES 2014 Exp(B)
(Intercept)		.097	.118	.112
[SEXOdic=,00]	Man	1.155	1.148	1.127
[SEXOdic=1,00] cor	Woman	1	1	1
[RESPONSA=0]	Yes	1.037	.945	.946
[RESPONSA=1] cor	No	1	1	1
[TIPOCON=1]	Full-time	1.031	1.036	1.069
[TIPOCON=2] cor	Part-time	1	1	1
[CNACerecodnumEWCS=2,00]	Industry	1.008	1.051	1.052
[CNACerecodnumEWCS=3,00]	Construction	1.304	1.366	1.308
[CNACerecodnumEWCS=4,00]	Trade and hospitality	.932	.910	.927
[CNACerecodnumEWCS=5,00]	Transportation	1.159	1.338	1.258
[CNACerecodnumEWCS=6,00]	Administrative, auxiliar and financial activities	1.086	1.035	1.053
[CNACerecodnumEWCS=7,00]	Public administration and defence	Not available data	1.769	1.852
[CNACerecodnumEWCS=8,00]	Education	1.279	1.472	1.456
[CNACerecodnumEWCS=9,00]	Healthcare	1.322	1.291	1.341
[CNACerecodnumEWCS=10,00] cor	Other services	1	1	1
[CNOrecodTOCH=1,00]	I Higher Controllers	.820	.835	.857
[CNOrecodTOCH=2,00]	II Lower controllers	.948	.976	.978
[CNOrecodTOCH=3,00]	III Routine non-manual employees	1.043	1.021	.975
[CNOrecodTOCH=5,00]	V Skilled manual workers	1.047	.984	.967
[CNOrecodTOCH=6,00] cor	VI Semi and unskilled manual workers	1	1	1
[REGULACION3k=1]	National collective agreement	.968	.910	.930
[REGULACION3k=2]	Sectoral or regional agreements	1.037	.954	.952
[REGULACION3k=3] cor	Company agreements	1	1	1
[ESTUrecodnum=1,00]	Basic studies	1.048	1.003	1.034
[ESTUrecodnum=2,00]	Vocational training	1.016	.983	1.040
[ESTUrecodnum=3,00] cor	University	1	1	1
antigu10	antigu10	1.122	1.144	1.140
SALOCTBR1K	SALOCTBR1K	1.400	1.264	1.248

cor: category of reference

In Table 5, Exp(B) is interpretable as a multiplicative factor that increases the analysed categories regarding the reference category. For expressing the result as a percentage, we need to apply the following transformation:  $[\text{Exp}(B) - 1] * 100$ . Also, the intercept is the mean of the dependent variable when the explanatory variables take the reference category, and the covariate is equal to 0. Our covariate units are either ten years of seniority or 1000 euros of gross pay for the reference month. For each covariate unit, Exp(B) is multiplied by the intercept. As a matter of fact, in the 2014 series, we could select one case placed in all the reference categories (woman without responsibility, temporary contract, company agreement, the higher level of education, NACE = 10, and CNO = 6), earning 1000 euros of gross salary, and ten years of length of service. In this case, the intensity of special payments not devoted to shiftwork (the dependent variable), is expected to be about 16%, according to the following calculation:

- $\text{Exp}(B) \text{ intercept} * \text{Exp}(B) \text{ antigu10} * \text{Exp}(B) \text{ SALOCTBR1K} (0.112 * 1.14 * 1.248 = 0.159)$

In the same way, if we select the same case but substituting the reference NACE (NACE=10) for another category (e.g., NACE = 7), the intensity would be  $0.159 * 1.852 = 0.294$ . That is to say, the

intensity of special payments not devoted to shiftwork, in this case, will be expected to be about 29% (an increase of 85% regarding the NACE reference category (15.9%).

Taking all the above into consideration, we can compare each factor one-by-one, but always keeping the other factors in the reference categories. Thus, in Table 5 we can observe that the intensity of special payments not devoted to shiftwork is slightly higher in men than in women, although, throughout the three series, the difference has narrowed gradually. However, these differences are not relevant. As a matter of fact, in 2014, the intensity of special payments not devoted to shiftwork in the case of a woman placed in all the reference categories is expected to be 15.9%. Selecting the same situation, but replacing a woman for a man, we expect the intensity of those payments to be 18% (an increase of 12.7% regarding the gender reference category). Thus, in terms of gross earnings, differences are not relevant enough.

Concerning the responsibility within the organization, the intensity is a little high in people who occupy positions with responsibility in the 2010 and 2014 series, while in 2006 the opposite is found. In this sense, some investigations point out that the wage premium to supervision, usually associated with middle management, represents a fixed component, although middle managers are paid differently for the same task according to the context where they work (Leonida et al., 2020). The type of contract has no relevance, although the intensity is more considerable in permanent than in temporary workers. As in the case of gender, in terms of gross earnings associated with special payments, both responsibility and the type of contract are far from being relevant. Yet again, the lack of flexibility in the Spanish labour market affects to a greater extent temporary workers due to the higher redundancy costs of permanent workers (Sanromá i Meléndez, 2012). This fact reinforces the assumption of the high rigidity in the Spanish labour market.

Concerning wage bargaining, company agreements tend to have more considerable advantages on the national collective agreement. As a result, both the incidence and the intensity of salary supplements seem to be higher when employment relationships are regulated by company or workplace agreements. In this sense, some authors point out that decentralized collective bargaining reduces real wage rigidity (Martínez Matute, 2016; Messina et al., 2010). This makes sense since any agreement can never be disadvantageous compared to the one established by law. Therefore, we could affirm that workers can influence salary improvement somehow. In the Spanish system, however, the coverage of collective bargaining is very high (between 75% and 80%), in contrast with the unionization rate (about 15%) (Díez Catalán & Villanueva, 2014; Martínez Matute, 2016). Moreover, the most common level of sectoral bargaining is the province, which often fails to adapt wages to. In this sense, the interests of bargaining are usually more oriented towards avoiding inequalities between workers than in adapting them to specific situations of each company or worker (Martínez Matute, 2016).

The level of education does not appear to be significant. We observe that the higher level of studies is not indicative of increasing the intensity of salary supplements. In fact, people with basic studies tend to have greater intensity than people with intermediate or higher education. Similarly, the intensity is not affected by the occupation (CNO). The CNO classification chosen for our analyses is strongly associated with the level of education. Therefore, it makes sense that both factors influence the intensity of special payments in a similar way. Again, the high wage-

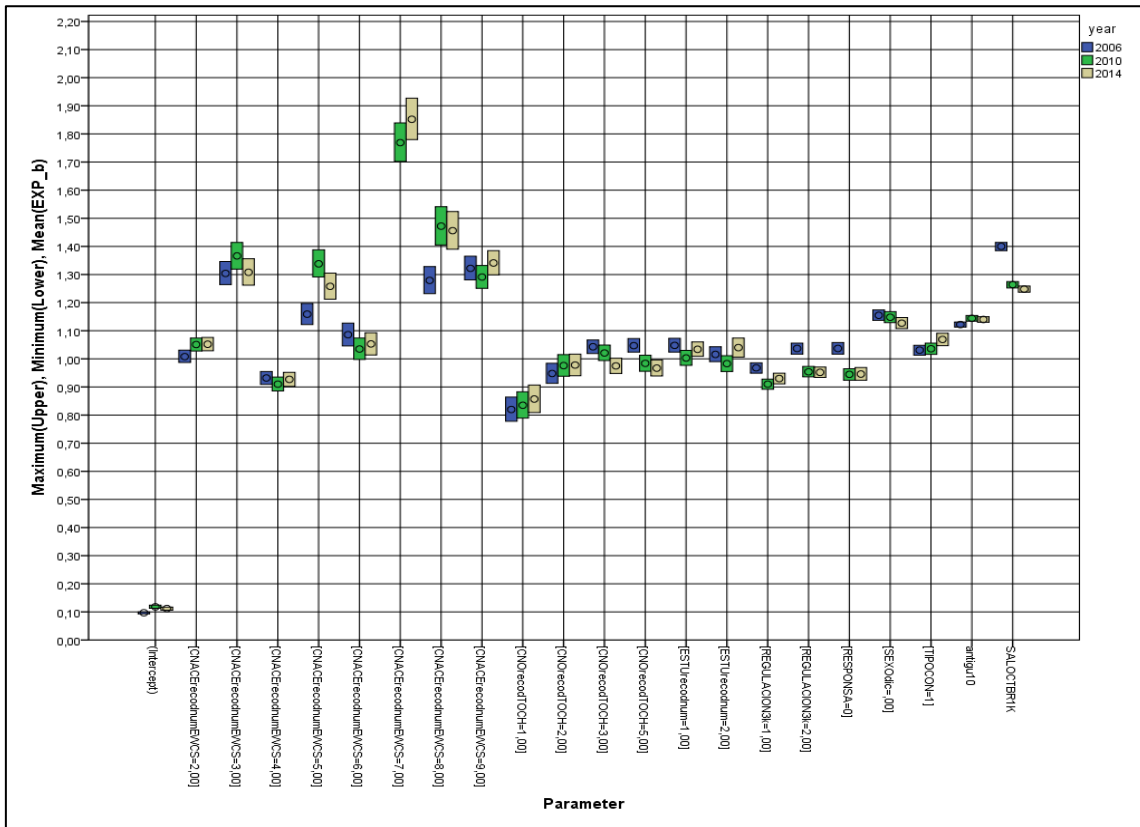
rigidity in the Spanish context promotes the absence of variable remuneration systems. A higher level of education, however, seems to be related to job security (Sanromá i Meléndez, 2012).

Concerning the economic activity (NACE), some activities are likely to affect the intensity with regard to the reference category, such as education, healthcare, construction, or transportation. Those activities are related either to public healthcare or education system or to activities in which special payments for shift work, danger, toxicity, or physical arduousness are very common. However, public administration and defence stand out (NACE=7), and we observe a more significant influence over the intensity. Thus, the intensity of special payments not devoted to shiftwork in a case placed in all the reference categories (including NACE=10) is expected to be 15.9% in 2014, and 17.1% in 2010. Selecting the same case, but replacing NACE=10 for NACE=7, we expect the intensity of those payments to be about 30% in both 2010 and 2014. These make sense since Spanish public employees usually have several supplements in their salary structure, as their basic salary is usually low. As a matter of fact, military personnel have specific supplements related to position or destination, extraordinary services, among others. Many public employees also have a salary bonus based on performance or productivity. Our results are consistent with prior research demonstrating the existence of wage premium associated with working in the public sector (Antón & de Bustillo, 2015; Hospido & Moral-Benito, 2016; Ramos et al., 2014).

Finally, we observe that both seniority and gross pay for the reference month affect the intensity. The seniority effect is similar within the three data series. In the case of gross salary, in the 2006 series, the effect is bigger than in the 2010 and 2014 series. Therefore, if the length of service and the gross salary is higher, the intensity of special payments not devoted to shiftwork is likely to represent a bigger percentage over the total salary. As a matter of fact, in the 2014 series, the intensity of the dependent variable will increase by 24% for every 1000 euros of gross salary. Our results are consistent with prior investigation pointing out the existence of larger premiums for highly paid workers (Card & De La Rica, 2006). In the same vein, other authors argue that the remuneration of top executives is dominated by the variable component, and therefore the intensity of special payments is higher for those who have higher payments (Greckhamer, 2016; Leonida et al., 2020). In this sense, stock options have increased their popularity over the past few decades (Wright & Kehoe, 2008).

All the commented above is summarized graphically in Figure 1. This graph allows us to observe which variables are likely to affect to a larger extend the intensity of special payments not devoted to shiftwork. Also, in this graph, we can compare all the variables covered in the study by using the confidence interval of the  $\text{Exp}(B)$  value. Hence, if the values of the three series of data (2006-2014) are not overlapped, it means that there are differences between the years under study. As a matter of fact, we can observe differences in some economic activities (NACE), such as education and transport, among others. Moreover, there are significant differences in the effect of the gross salary (bigger difference in 2006 than in 2010 and 2014) and the effect of responsibility and wage bargaining. Concerning the CNO classification, we only observe differences in the skilled manual workers' category, also in 2006. Also, we can observe that the intercept was slightly low in 2006. That is to say, the intensity of special payments not devoted to shiftwork is lower under the same employment conditions in 2006 than in 2010 or 2014.

Figure 1: Comparative ExpB EES 2006-2014



RQ4 explores the influence of economic cycles on salary-based motivation programs. Again, we focus on the results presented in Table 2. Due to the cross-section nature of the data, Table 2 provides a picture at a specific point in time. Yet, it allows us to see that remuneration programs are not relevant. In this sense, we could easily suspect that economic cycles are not affecting remuneration programs, for the simple reason that they are not common in Spain. Despite this, minor changes can be noticed. The incidence of monthly supplements not related to shiftwork is lower in both 2010 and 2014 than in the 2006 survey. This also applies to extraordinary annual bonuses, in which we observe a relevant decrease. The intensity is similar in the monthly supplements, or even lower in the case of extraordinary annual payments. Hence, although those variables are not disaggregated by fixed and variable, we can assume that variable remuneration programs are not relevant in 2010 and 2014, as they were not in 2006. The incidence and intensity of overtime payments are slightly lower, whereas in the case of payment in kind is a little higher. Still, these components represent a small part of the total salary, as in 2006. The decrease of both the overtime payments and the extraordinary annual payments could be related to the financial crisis in 2008 and the subsequent reform of the Spanish labour market. Yet, we cannot appreciate greater differences between the series, which could be related to the salary structure rigidity and the low incidence of variable remuneration programs. In this sense, our results are consistent with prior evidence demonstrating that the Spanish labour market presents a high wage-rigidity and low wage-flexibility to face the economic shocks (Moral Arce & Maza Fernández, 2010; Sanromá i Meléndez, 2012). Also, since most of the salaries are regulated by collective agreements (Díez Catalán & Villanueva, 2014; Martínez Matute, 2016), we did not expect significant differences between the series. In fact, people who did not lose their job because of the financial crisis may not have their salaries altered because

of the rigid wage structure. In this sense, Spain leads the rate of companies whose response to the economic downturns is mainly based on the workforce adjustment, generating high volatility of the unemployment rate (Sanromá i Meléndez, 2012).

## **Conclusions**

The purpose of our research was to assess extrinsic motivation within the Spanish HRM context. Specifically, we aimed to identify whether remuneration programs are relevant in the Spanish labour market. In the same vein, we also aimed to find out why the 2006 series reflects variable supplements related to performance, whereas they are not disaggregated in subsequent series. Likewise, we were also interested in detecting which are the factors (at company and personal level) that might affect the adoption of extrinsic motivation programs. Finally, we wanted to assess the incidence of the financial crisis in salary-based motivation programs.

The overall conclusion of our study is that both the incidence and the intensity of the remuneration programs related to extrinsic motivation in the Spanish context are low. Consequently, we can affirm that, within the AMO framework, the motivation section (M) is not likely to be related to variable remuneration. It seems that the salary structure in the Spanish context is mostly influenced by the current labour legislation. In this sense, the “equal pay for equal work” argument appears to be imposed in the Spanish context, and variable remuneration seems to be an exception to the rule. In fact, our results show that the basic salary is the central part of the monthly gross amount. Moreover, both fixed bonuses not related to shiftwork and annual extraordinary-fixed payments account for a considerable proportion of the salary. On the contrary, monthly, or annual variable payments have little incidence, whereas overtime payments and payments in kind represent an insignificant part of the total income. Concerning the intensity, this fact is further amplified, since variable supplements represent a marginal part of the salary. In the 2006 series, there were specific categories collecting data from both monthly variable bonuses and extraordinary variable payments. However, in subsequent series, those payments are not disaggregated. Our results show that in 2006 these categories were not relevant. In addition, we have not observed significant differences between the three series of data. Indeed, the incidence of monthly supplements not related to shiftwork and extraordinary annual bonuses is even lower in both 2010 and 2014 than in the 2006 series. Hence, we assume that INE considered not necessary to break down these categories into fixed and variables. In other words, we believe that remuneration programs are not relevant in 2010 and 2014, as they were not in the 2006 series. This issue links directly with another of our research questions. We were also interested in understanding the impact of the financial crisis on the salary structure. For that reason, we studied three different series of data: 2006, 2010, and 2014. Only the decrease of both the overtime payments and the extraordinary payments from 2006 to 2014 could be related to the financial crisis and the subsequent reform of the Spanish labour market. However, these differences are no relevant enough. This fact could be associated with the absence of flexibility in the salary structure and the strong presence of collective bargaining agreements, which causes the homogenization among the EES series. As we said before, we are concerned about the cross-sectional nature of the data. However, we are convinced that this



analysis allows us to better understand the situation of remuneration programs in Spain. If the analysis had revealed large changes between waves, it might be the starting point of future research. On the contrary, as major changes have not been shown, we can conclude that these programs are not relevant in the Spanish context.

In the literature review section, we mentioned that many investigations deal with factors affecting salaries as a whole (total gross salary without dividing by retribution concepts). We considered that those factors could also affect the implementation of remuneration programs in the Spanish context. Therefore, we conducted a generalized linear model analysis for identifying how several factors influenced the intensity of special payments not devoted to shiftwork. Our results show that a few of the factors studied had a substantial effect on the intensity of the dependent variable. However, some aspects deserve to be mentioned. First, in the three series, we observe that intensity is slightly greater in men than in women, but this difference has been narrowed gradually. Our investigation only focuses on the incidence and the intensity of remuneration programs, but maybe this trend could be related to gender equality policies carried out during the last years. Second, although differences are minimal, the intensity tends to be greater in jobs with responsibility (except for 2006 series), and in permanent contracts than in temporary ones. Neither the level of education nor the occupation appear to be significant. Third, both the incidence and the intensity of salary supplements are greater when employment relationships are regulated by company or workplace agreements than when this is done by national or regional ones. This is a good example of how HRM can positively affect job conditions. In future research, it would be interesting to group both company and work centre agreements, because these agreements are created with similar procedures, and they have similar effects over the salary components. Fourth, concerning economic activities, some of them are likely to affect the intensity. The most significant differences are shown in public administration and defence. These differences make sense since public employees usually have several supplements in their salary structure. In future research, however, it would be interesting to find out how these supplements are measured or if they are somehow fixed supplements without regard to job performance. Other activities such as education, healthcare, construction, and transportation are likely to affect the intensity, although to a lesser extent. Finally, both seniority and the amount of gross pay for the reference month affect the intensity. Consequently, if the length of service and the gross salary is higher, the intensity of special payments not devoted to shiftwork is likely to represent a bigger percentage over the total salary.

Concerning the contributions of this research, we consider that it is interesting both at an academic and a professional level. We assess whether remuneration programs are relevant in the Spanish context to be considered in research models. We have also clarified several issues related to the salary structure composition in Spain. As a matter of fact, we have revealed that remuneration programs related to extrinsic motivation are not being widely used in the Spanish context. This fact is relevant since many studies point out that employee involvement is essential for the success of the organizations in the current context. On these grounds, we must ask ourselves several questions. Are extrinsic motivation programs being used in Spain? If so, how are they implemented? Does the current regulation prevent the use of these programs? Should

it be more flexible for enhancing business performance? Further studies could be devoted to answering these questions.

We consider that the EES is a quality source that allows us to explore our research questions. Moreover, the sample is wide-ranging and highly representative of the population. However, the main limitation of the study is that EES is an omnibus survey with specific questions on which we cannot intervene. In this sense, many economic participation programs are grouped into a single category within the survey, which limits the possibility of analysis. In addition, EES survey provides cross-sectional data, which limits the possibility of establishing causal relationships. These limitations are well-known in the HRM context.

In the literature review, we have found that many studies also use data from the INE. Yet, some authors use other sources of information, such as the Continuous Sample of Working Lives (CSWL) (Arranz Muñoz & García Serrano, 2014; Messina et al., 2010) or the European community household panel survey (ECHP) (Budría & Moro-Egido, 2008; Peraita, 2005). This fact provides a possible line of future research since these sources could help us to clarify our research questions. Another important limitation is that our research only uses official data provided by company payroll records. Therefore, it does not consider the existence of unofficial data. As a matter of fact, a study of the statistical service of the Employment, Social Affairs and Inclusion of the European Commission indicates that 8.8% of the Spanish workforce operates within the framework of undeclared work (Williams et al., 2017). This could mean, for example, that the intensity of overtime payments was greater than the results obtained in our analysis. Therefore, further empirical research could be linked to identifying new sources or studies to understand the current situation better. Also, further studies could be devoted to replicate the analyses with the subsequent series of data. In this vein, we expect the 2018/2019 series to be published during 2021. Concerning the factors under study, it would be interesting to group both company and work centre agreements, because these agreements are created with similar procedures, and they have similar effects over the salary components.

#### **Credit authorship contribution statement**

Authors are shown in alphabetical order.

**Juan A. Marin-Garcia:** Conceptualization, Data curation, Formal analysis, Methodology, Writing-review & editing, Software, Supervision, Validation. **Juan Martinez-Tomas:** Conceptualization, Visualization, Formal analysis, Writing-Original draft, Writing – review & editing, Data curation.

## ANNEX 1

Intensity variables:

- intSALBASE=SALBASE/ SALOCTBR
- intPHEXTRA=PHEXTRA/ SALOCTBR
- intCOMSAL=COMSAL/ SALOCTBR
- intCOMSALTT=COMSALTT/ SALOCTBR
- intCOMSALV=COMSALV/ SALOCTBR
- intCOMSALotFIJ=COMSALotFIJ/ SALOCTBR
- intCOMSALnoTT=COMSALnoTT/ SALOCTBR
- intGEXTRA=GEXTRA/ SALBRUTO
- intPEXTRAAF=PEXTRAAF/ SALBRUTO
- intPEXTRAAV=PEXTRAAV/ SALBRUTO
- intVESP=VESP/ SALBRUTO

Incidence dichotomous variables:

- dicPHEXTRA= PHEXTRA > 0
- dicCOMSAL= COMSAL > 0
- dicCOMSALTT= COMSALTT > 0
- dicCOMSALV= COMSALV > 0
- dicCOMSALotFIJ=COMSALotFIJ > 0
- dicCOMSALnoTT=COMSALnoTT > 0
- dicGEXTRA=GEXTRA > 0
- dicPEXTRAAF= PEXTRAAF > 0
- dicPEXTRAAV= PEXTRAAV > 0
- dicVESP= VESP > 0

### Descriptive statistics

DESCRIPTIVES VARIABLES=intSALBASE intCOMSAL intCOMSALTT intCOMSALV intCOMSALotFIJ  
intCOMSALnoTT

intGEXTRA intPEXTRAAF intPEXTRAAV intVESP intPHEXTRA

/STATISTICS=MEAN STDDEV MIN MAX KURTOSIS SKEWNESS.

DESCRIPTIVES VARIABLES=dicPHEXTRA dicCOMSAL dicCOMSALTT dicCOMSALV dicCOMSALotFIJ  
dicCOMSALnoTT

dicGEXTRA dicPEXTRAAF dicPEXTRAAV dicVESP

/STATISTICS=MEAN

## ANNEX 2

Table a.- NACE recoded to NACE\_EWCS

Sections	Title	EWCS
A	Agriculture, forestry, and fishing	1. Agriculture
B	Mining and quarrying	2. Industry
C	Manufacturing	
D	Electricity, gas, steam and air-conditioning supply	
E	Water supply, sewerage, waste management, and remediation	
F	Construction	
G	Wholesale and retail trade, repair of motor vehicles and motorcycles	4. Trade and hospitality
I	Accommodation and food service activities	5. Transportation
H	Transportation and storage	
K	Financial and insurance activities	
L	Real estate activities	6. Administrative, auxiliary and financial activities
O	Public administration and defense, compulsory social security	7. Public administration and defense

P	Education	8. Education
Q	Human health and social work activities	9. Healthcare
J	Information and communication	10. Other services
M	Professional, scientific, and technical activities	
N	Administration and support service activities	
R	Arts, entertainment and recreation	
S	Other services	

**Table b.- CNO recoded to CNO\_EWCS**

Sections	Title	CNO_EWCS
A	Directors and managers	1. Directors and managers
B	Scientific and intellectual technicians and professionals	2. Scientific and intellectual technicians and professionals
C	Other scientific and intellectual technicians and professionals	
D	Technicians; support professionals	3. Technicians; support professionals
E	Office employees who do not deal with the public	4. Accounting and administrative employees
F	Customer service clerks	
G	Catering and trade service workers	5. Workers in catering, personal, and protection services
H	Health services and personal care workers	
I	Protective and security services workers	
J	Skilled agricultural, livestock, forestry and fishery workers	6. Skilled agricultural, livestock, forestry and fishery workers
K	Skilled construction workers, except machinery operators	7. Skilled manufacturing industry and construction craftspersons and workers
L	Skilled manufacturing industry workers, except installation and machine operators	
M	Stationary plant and machinery operators, and assemblers	8. Plant and machine operators, and assemblers
N	Mobile machine drivers and operators	
O	Unskilled services workers (except transport)	9. Elementary occupations
P	Agricultural, fishing, construction, manufacturing and transport industry laborers	
Q	Armed forces occupations	Missing values

**Table c.- CNO\_EWCS recoded to CNO\_ToCh**

Sections	Title	CNO_EWCS
1	Directors and managers	I Higher controllers
2	Scientific and intellectual technicians and professionals	II Lower controllers
3	Technicians; support professionals	III Routine non-manual employees
4	Accounting and administrative employees	
5	Workers in catering, personal, and protection services	
6	Skilled agricultural, livestock, forestry and fishery workers	V Skilled manual workers
7	Skilled manufacturing industry and construction craftspersons and workers	
8	Plant and machine operators, and assemblers	
9	Elementary occupations	VI Semi and unskilled manual workers

Table d: Descriptive statistics of continuous variable (EES 2006)

		N	Minimum	Maximum	Mean	Std. Deviation
Dependent Variable	intCOMSALnoTTplus intCOMSALnoTTplus=int COMSALnoTT+0.00001	235272	.00	1.00	.2420	.20795
Covariate	antigu10 antigu10=antigu/10	235272	.01	5.70	.8130	.96245
	SALOCTBR1K SALOCTBR1K=SALOCTBR /1000	235272	.01	22.15	1.5398	1.01639
intCOMSALnoTTplus: special payments not devoted to shiftwork; antigu10: seniority; SALOCTBR1K: gross pay for the reference month (October)						

Table e: Descriptive statistics of continuous variable (EES 2010)

		N	Minimum	Maximum	Mean	Std. Deviation
Dependent Variable	intCOMSALnoTTplus intCOMSALnoTTplus=int COMSALnoTT+0.00001	216769	.00	1.00	.2513	.22465
Covariate	antigu10 antigu10=antigu/10	216769	.01	5.62	.9252	.96153
	SALOCTBR1K SALOCTBR1K=SALOCTBR /1000	216769	.01	72.41	1.8691	1.36010
intCOMSALnoTTplus: special payments not devoted to shiftwork; antigu10: seniority; SALOCTBR1K: gross pay for the reference month (October)						

Table f: Descriptive statistics of continuous variable (EES 2014)

		N	Minimum	Maximum	Mean	Std. Deviation
Dependent Variable	intCOMSALnoTTplus intCOMSALnoTTplus=int COMSALnoTT+0.00001	209362	.00	1.00	.2431	.22020
Covariate	antigu10 antigu10=antigu/10	209362	.01	6.00	1.0399	.96924
	SALOCTBR1K SALOCTBR1K=SALOCTBR /1000	209362	.01	96.09	1.9341	1.44980
intCOMSALnoTTplus: special payments not devoted to shiftwork; antigu10: seniority; SALOCTBR1K: gross pay for the reference month (October)						

## ANNEX 4

GLM SPSS syntax for the 2006, 2010 and 2014 series:

```

GENLIN intCOMSALnoTTplus BY SEXOdic RESPONSA TIPOCON CNACErecodnumEWCS CNOrecodTOCH REGULACION3k
ESTUrecodnum (ORDER=ASCENDING) WITH antiguo10 SALOCTBR1K

/MODEL SEXOdic RESPONSA TIPOCON CNACErecodnumEWCS CNOrecodTOCH REGULACION3k ESTUrecodnum antiguo10
SALOCTBR1K INTERCEPT=YES

DISTRIBUTION=GAMMA LINK=LOG

/CRITERIA METHOD=FISHER(1) SCALE=MLE COVB=MODEL MAXITERATIONS=100 MAXSTEPHALVING=5 PCONVERGE=1E-
006(ABSOLUTE) SINGULAR=1E-012 ANALYSISTYPE=3(WALD) CILEVEL=95 CITYPE=WALD LIKELIHOOD=FULL

/MISSING CLASSMISSING=EXCLUDE

/PRINT CPS DESCRIPTIVES MODELINFO FIT SUMMARY SOLUTION (EXPONENTIATED).
    
```

## ANNEX 5

Table d.- EES 2006. <sup>a</sup>Parts per unit of people having remuneration components and <sup>b</sup>intensity descriptives of remuneration components parts per unit over the total salary)

	people <sup>a</sup>	Minimum <sup>b</sup>	Maximum <sup>b</sup>	Mean <sup>b</sup>	Standard deviation <sup>b</sup>	Skewness <sup>b</sup>	Kurtosis <sup>b</sup>
SALBASE	1	.00	1.00	.7352	.2151	-.518	-.669
PHEXTRA	.0661	.00	.70	.0072	.0368	7.011	59.400
COMSAL	.8443	.00	1.00	.2576	.2123	.563	-.587
COMSALTT	.1511	.00	.86	.0156	.0532	5.116	34.793
▪ COMSALV	.2869	.00	1.00	.0557	.1226	2.772	8.283
▪ COMSALotFIJ	.7469	-.04	1.00	.1863	.1956	1.005	.202
COMSALnoTT	.8288	.00	1.00	.2420	.2080	.637	-.472
GEXTRA	.9044	.00	.92	.1469	.0869	.867	2.458
▪ PEXTRAAF	.8925	.00	.77	.1291	.0703	.329	1.697
▪ PEXTRAAB	.2114	.00	.84	.0178	.0525	4.316	23.301
VESP	.1148	.00	.47	.0023	.0139	13.806	276.089
N of valid cases 235272							

Table e.- <sup>a</sup>Parts per unit of people having remuneration components and <sup>b</sup>intensity descriptives of remuneration components parts per unit over the total salary)

	people <sup>a</sup>	Minimum <sup>b</sup>	Maximum <sup>b</sup>	Mean <sup>b</sup>	Standard deviation <sup>b</sup>	Skewness <sup>b</sup>	Kurtosis <sup>b</sup>
SALBASE	1	.00	1.00	.7272	.23263	-.490	-.842
PHEXTRA	.0527	.00	.74	.0059	.03496	8.346	84.992
COMSAL	.8031	.00	1.00	.2669	.23028	.524	-.797
COMSALTT	.1581	.00	.90	.0155	.05286	5.334	39.127
COMSALnoTT	.7908	.00	1.00	.2513	.22465	.584	-.721
GEXTRA	.7608	.00	.92	.1184	.09296	.811	1.999
VESP	.1570	.00	.25	.0028	.01447	9.729	120.633
N of valid cases 216769							

Table f.- ESS 2014 <sup>a</sup>Parts per unit of people having remuneration components and <sup>b</sup>intensity descriptives of remuneration components parts per unit over the total salary)

	people <sup>a</sup>	Minimum <sup>b</sup>	Maximum <sup>b</sup>	Mean <sup>b</sup>	Standard deviation <sup>b</sup>	Skewness <sup>b</sup>	Kurtosis <sup>b</sup>
SALBASE	1	.00	1.00	.7394	.22700	-.550	-.756
PHEXTRA	.0397	.00	.61	.0039	.02601	9.603	113.297
COMSAL	.7998	.00	1.00	.2568	.22550	.577	-.711
COMSALTT	.1462	.00	.81	.0137	.04742	5.213	35.817
COMSALnoTT	.7913	.00	1.00	.2431	.22021	.642	-.613
GEXTRA	.7521	.00	.92	.1145	.09188	.868	2.429
VESP	.2099	.00	.25	.0033	.01418	8.197	88.324
N of valid cases 209436							

ANNEX 6

Table g. GLM parameter estimates EES 2006

Parameter	B	Std. Error	95% Wald Confidence Interval		Hypothesis Test			Exp(B)	95% Wald Confidence Interval for Exp(B)	
			Lower	Upper	Wald Chi-Square	df	Sig.		Lower	Upper
(Intercept)	-2.337	.0187	-2.374	-2.301	15585.39	1	.000	.097	.093	.100
[SEXOdic=,00]	.144	.0081	.128	.160	317.045	1	.000	1.155	1.137	1.174
[SEXOdic=1,00]	0 <sup>a</sup>	.	.	.	.	.	.	1	.	.
[RESPONSA=1]	.037	.0099	.017	.056	13.679	1	.000	1.037	1.017	1.058
[RESPONSA=6]	0 <sup>a</sup>	.	.	.	.	.	.	1	.	.
[TIPOCON=1]	.030	.0086	.013	.047	12.296	1	.000	1.031	1.013	1.048
[TIPOCON=2]	0 <sup>a</sup>	.	.	.	.	.	.	1	.	.
[CNACerecodnum EWCS=2,00]	.008	.0112	-.014	.030	.565	1	.452	1.008	.987	1.031
[CNACerecodnum EWCS=3,00]	.266	.0159	.235	.297	279.911	1	.000	1.304	1.264	1.346
[CNACerecodnum EWCS=4,00]	-.071	.0126	-.095	-.046	31.263	1	.000	.932	.909	.955
[CNACerecodnum EWCS=5,00]	.148	.0165	.115	.180	80.212	1	.000	1.159	1.122	1.197
[CNACerecodnum EWCS=6,00]	.082	.0191	.045	.120	18.542	1	.000	1.086	1.046	1.127
[CNACerecodnum EWCS=8,00]	.246	.0190	.209	.284	167.361	1	.000	1.279	1.232	1.328
[CNACerecodnum EWCS=9,00]	.279	.0163	.247	.311	294.010	1	.000	1.322	1.281	1.365
[CNACerecodnum EWCS=10,00]	0 <sup>a</sup>	.	.	.	.	.	.	1	.	.
[CNOrecodTOCH =1,00]	-.198	.0266	-.250	-.146	55.707	1	.000	.820	.778	.864
[CNOrecodTOCH =2,00]	-.053	.0191	-.091	-.016	7.842	1	.005	.948	.913	.984
[CNOrecodTOCH =3,00]	.042	.0117	.019	.065	12.875	1	.000	1.043	1.019	1.067
[CNOrecodTOCH =5,00]	.046	.0118	.023	.069	15.488	1	.000	1.047	1.024	1.072
[CNOrecodTOCH =6,00]	0 <sup>a</sup>	.	.	.	.	.	.	1	.	.
[REGULACION3k =1,0]	-.033	.0098	-.052	-.014	11.205	1	.001	.968	.949	.986
[REGULACION3k =2,0]	.036	.0095	.017	.055	14.264	1	.000	1.037	1.017	1.056
[REGULACION3k =3,0]	0 <sup>a</sup>	.	.	.	.	.	.	1	.	.
[ESTUrecodnum= 1]	.047	.0119	.024	.070	15.750	1	.000	1.048	1.024	1.073
[ESTUrecodnum= 2]	.016	.0133	-.010	.042	1.397	1	.237	1.016	.990	1.043
[ESTUrecodnum= 3]	0 <sup>a</sup>	.	.	.	.	.	.	1	.	.
antigu10	.115	.0041	.107	.123	806.163	1	.000	1.122	1.113	1.131
SALOCBR1K	.336	.0053	.326	.347	3978.488	1	.000	1.400	1.385	1.414
(Scale)	2.663 <sup>b</sup>	.0062	2.651	2.675						

Dependent Variable: intCOMSALnoTTplus=intCOMSALnoTT+0.00001  
 Model: (Intercept), SEXOdic, RESPONSA, TIPOCON, CNACerecodnumEWCS, CNOrecodTOCH, REGULACION3k, ESTUrecodnum, antigu10, SALOCBR1K

- a. Set to zero because this parameter is redundant.
- b. Maximum likelihood estimate.

Table h. GLM parameter estimates EES 2010

Parameter Estimates										
Parameter	B	Std. Error	95% Wald Confidence Interval		Hypothesis Test			Exp(B)	95% Wald Confidence Interval for Exp(B)	
			Lower	Upper	Wald Chi-Square	df	Sig.		Lower	Upper
(Intercept)	-2.136	.0240	-2.183	-2.089	7906.121	1	.000	.118	.113	.124
[SEXOdic=,00]	.138	.0087	.121	.155	252.570	1	.000	1.148	1.129	1.168
[SEXOdic=1,00]	0 <sup>a</sup>	.	.	.	.	.	.	1	.	.
[RESPONSA=0]	-.057	.0111	-.079	-.035	26.184	1	.000	.945	.924	.965
[RESPONSA=1]	0 <sup>a</sup>	.	.	.	.	.	.	1	.	.
[TIPOCON=1]	.035	.0099	.016	.055	12.804	1	.000	1.036	1.016	1.056
[TIPOCON=2]	0 <sup>a</sup>	.	.	.	.	.	.	1	.	.
[CNACerecodnum EWCS=2,00]	.049	.0113	.027	.072	19.104	1	.000	1.051	1.028	1.074
[CNACerecodnum EWCS=3,00]	.312	.0179	.277	.347	303.283	1	.000	1.366	1.319	1.414
[CNACerecodnum EWCS=4,00]	-.094	.0137	-.121	-.067	46.920	1	.000	.910	.886	.935
[CNACerecodnum EWCS=5,00]	.291	.0185	.255	.328	247.652	1	.000	1.338	1.291	1.388
[CNACerecodnum EWCS=6,00]	.035	.0189	-.002	.072	3.393	1	.065	1.035	.998	1.074
[CNACerecodnum EWCS=7,00]	.570	.0197	.532	.609	836.112	1	.000	1.769	1.702	1.839
[CNACerecodnum EWCS=8,00]	.386	.0236	.340	.433	267.104	1	.000	1.472	1.405	1.541
[CNACerecodnum EWCS=9,00]	.255	.0160	.224	.286	255.451	1	.000	1.291	1.251	1.332
[CNACerecodnum EWCS=10,00]	0 <sup>a</sup>	.	.	.	.	.	.	1	.	.
[CNOrecodTOCH =1,00]	-.181	.0286	-.237	-.125	39.889	1	.000	.835	.789	.883
[CNOrecodTOCH =2,00]	-.024	.0201	-.064	.015	1.474	1	.225	.976	.938	1.015
[CNOrecodTOCH =3,00]	.021	.0135	-.006	.047	2.388	1	.122	1.021	.994	1.049
[CNOrecodTOCH =5,00]	-.016	.0146	-.045	.013	1.191	1	.275	.984	.956	1.013
[CNOrecodTOCH =6,00]	0 <sup>a</sup>	.	.	.	.	.	.	1	.	.
[REGULACION3k =1,00]	-.094	.0101	-.114	-.074	86.192	1	.000	.910	.892	.928
[REGULACION3k =2,00]	-.047	.0098	-.066	-.028	22.899	1	.000	.954	.936	.973
[REGULACION3k =3,00]	0 <sup>a</sup>	.	.	.	.	.	.	1	.	.
[ESTUrecodnum= 1,00]	.003	.0133	-.023	.029	.054	1	.817	1.003	.977	1.030
[ESTUrecodnum= 2,00]	-.018	.0144	-.046	.011	1.486	1	.223	.983	.955	1.011
[ESTUrecodnum= 3,00]	0 <sup>a</sup>	.	.	.	.	.	.	1	.	.
antigu10	.135	.0044	.126	.143	926.842	1	.000	1.144	1.134	1.154
SALOCTBR1K	.234	.0046	.225	.243	2576.510	1	.000	1.264	1.252	1.275
(Scale)	3.101 <sup>b</sup>	.0075	3.086	3.116						

Dependent Variable: intCOMSALnoTTplus=intCOMSALnoTT+0.00001  
 Model: (Intercept), SEXOdic, RESPONSA, TIPOCON, CNACerecodnumEWCS, CNOrecodTOCH, REGULACION3k, ESTUrecodnum, antigu10, SALOCTBR1K

a. Set to zero because this parameter is redundant.

b. Maximum likelihood estimate.



Table i. GLM parameter estimates EES 2014

Parameter Estimates										
Parameter	B	Std. Error	95% Wald Confidence Interval		Hypothesis Test			Exp(B)	95% Wald Confidence Interval for Exp(B)	
			Lower	Upper	Wald Chi-Square	df	Sig.		Lower	Upper
(Intercept)	-2.191	.0252	-2.240	-2.141	7540.560	1	.000	.112	.106	.117
[SEXOdic=.00]	.120	.0088	.102	.137	184.346	1	.000	1.127	1.108	1.147
[SEXOdic=1,00]	0 <sup>a</sup>	.	.	.	.	.	.	1	.	.
[RESPONSA=0]	-.055	.0121	-.079	-.032	20.865	1	.000	.946	.924	.969
[RESPONSA=1]	0 <sup>a</sup>	.	.	.	.	.	.	1	.	.
[TIPOCON=1]	.067	.0105	.046	.087	40.635	1	.000	1.069	1.047	1.091
[TIPOCON=2]	0 <sup>a</sup>	.	.	.	.	.	.	1	.	.
[CNACerecodnum EWCS=2,00]	.051	.0114	.029	.073	19.866	1	.000	1.052	1.029	1.076
[CNACerecodnum EWCS=3,00]	.269	.0184	.233	.305	214.611	1	.000	1.308	1.262	1.356
[CNACerecodnum EWCS=4,00]	-.076	.0138	-.103	-.049	30.287	1	.000	.927	.902	.952
[CNACerecodnum EWCS=5,00]	.230	.0189	.193	.266	147.960	1	.000	1.258	1.212	1.305
[CNACerecodnum EWCS=6,00]	.052	.0193	.014	.089	7.153	1	.007	1.053	1.014	1.093
[CNACerecodnum EWCS=7,00]	.616	.0203	.576	.656	917.414	1	.000	1.852	1.780	1.927
[CNACerecodnum EWCS=8,00]	.376	.0234	.330	.421	256.838	1	.000	1.456	1.390	1.524
[CNACerecodnum EWCS=9,00]	.294	.0163	.262	.325	325.788	1	.000	1.341	1.299	1.385
[CNACerecodnum EWCS=10,00]	0 <sup>a</sup>	.	.	.	.	.	.	1	.	.
[CNOrecodTOCH =1,00]	-.155	.0290	-.211	-.098	28.486	1	.000	.857	.809	.907
[CNOrecodTOCH =2,00]	-.022	.0200	-.062	.017	1.251	1	.263	.978	.940	1.017
[CNOrecodTOCH =3,00]	-.025	.0141	-.053	.002	3.230	1	.072	.975	.948	1.002
[CNOrecodTOCH =5,00]	-.034	.0152	-.063	-.004	4.929	1	.026	.967	.939	.996
[CNOrecodTOCH =6,00]	0 <sup>a</sup>	.	.	.	.	.	.	1	.	.
[REGULACION3k =1]	-.073	.0103	-.093	-.052	49.484	1	.000	.930	.911	.949
[REGULACION3k =2]	-.049	.0099	-.068	-.029	24.292	1	.000	.952	.934	.971
[REGULACION3k =3]	0 <sup>a</sup>	.	.	.	.	.	.	1	.	.
[ESTUrecodnum= 1,00]	.033	.0127	.009	.058	6.917	1	.009	1.034	1.009	1.060
[ESTUrecodnum= 2,00]	.039	.0167	.006	.072	5.498	1	.019	1.040	1.006	1.074
[ESTUrecodnum= 3,00]	0 <sup>a</sup>	.	.	.	.	.	.	1	.	.
antigu10	.131	.0045	.122	.140	838.004	1	.000	1.140	1.130	1.150
SALOCTBR1K	.221	.0046	.212	.230	2357.419	1	.000	1.248	1.237	1.259
(Scale)	3.095 <sup>b</sup>	.0076	3.080	3.110						

Dependent Variable: intCOMSALnoTTplus=intCOMSALnoTT+0.00001

Model: (Intercept), SEXOdic, RESPONSA, TIPOCON, CNACerecodnumEWCS, CNOrecodTOCH, REGULACION3k, ESTUrecodnum, antigu10, SALOCTBR1K

a. Set to zero because this parameter is redundant.

b. Maximum likelihood estimate.



Capítulo 5: Comparing predictive validity of summative and multiplicative AMO models to explain attitudinal outcomes (job satisfaction)



## ***Comparing predictive validity of additive versus multiplicative AMO models to explain attitudinal outcomes (job satisfaction)***

Marin-Garcia, J. A., & Martínez-Tomás, J. (2022). Comparing predictive validity of additive versus multiplicative AMO models to explain attitudinal outcomes (job satisfaction). Submitted to European Journal of Management and Business Economics (EJM&BE)

### **Abstract**

**Purpose:** This study aims to explore the effects of HRM systems on attitudinal outcomes in the Spanish context. For that purpose, drawing on the AMO model, we compare the predictive capacity of the summative and multiplicative approaches at the individual level, focusing on job satisfaction.

**Design/ methodology:** We gather the data from the Spanish sample of the International Assessment of Adult competences (PIAAC) conducted by the OCDE. We use partial least square regression (PLS) to evaluate the predictive capacity of summative and multiplicative approaches. Also, we conduct further analyses to identify possible heterogeneity variables and test the out-of-sample predictive capacity of the models

**Findings:** Our results show that the proposed models cannot predict more than 10%, at best, of the job satisfaction variation. Therefore, according to our data, the AMO model effect on job satisfaction seems low in Spain. Although the differences are not remarkable, we have found some interesting issues. All analyses reveal a greater influence of practices related to the ability bundle, followed by opportunities. The motivation effect hardly influences the models' predictive capacity. Also, results considerably improve among employees with managerial positions. Finally, the multiplicative model better predicts variations in JS. In this sense, we have found significant results in the skills-motivation and the motivation-opportunity interactions.

**Research limitations:** We use data from an existing survey (PIAAC), which limits the possibility of analysis since we cannot intervene in its design. In addition, the data were collected at a single point in time, avoiding the possibility of establishing causal relationships. Also, we have included several factors that could affect job satisfaction in the analysis. However, many other factors at the individual and organizational levels could be considered.

**Practical implications:** Many studies have shown the positive effects of job satisfaction at the individual and organizational levels. Determining how the AMO model works could help HR managers to develop practical solutions and sets of HR practices to enhance job satisfaction.

**Originality/ value:** Investigations comparing summative and multiplicative approaches of the AMO model are still rare; therefore, this study partially fills this gap. Also, most research focuses on organizational level-outcomes, while we explore the predictive capacity of the AMO model at the individual level, focusing on job satisfaction. Finally, many studies assess HR practices related to extrinsic motivation, such as pay for performance, while few studies consider intrinsic motivation. We have used the motivation to learn to explore intrinsic motivation.

**Keywords:** Job satisfaction; High-involvement work systems; AMO model; Summative & multiplicative models; Ability; Motivation; Opportunities; Human resource management; PIAAC

## Introduction

Employee participation can take the form of various management practices that involve employees in sharing information and making decisions (Cabrera et al., 2003). Hence, employee participation means the entrance of workers into the authority and operations of management (Franca & Pahor, 2012). In the current context, employee participation has become an essential element for the success of organizations since this allows them to improve their results in a very significant way (Appelbaum et al., 2000; Bayo-Moriones et al., 2015; Huselid, 1995; Jiang, Lepak, Hu, et al., 2012; Juarez-Tarraga et al., 2019). The term high-performance work practices (HPWP) (also referred to in the literature as high-involvement management or innovative work practices (Bayo-Moriones & Galdon-Sanchez, 2010) refer to a broad set of human resources practices that aim to make organizations more participative and flexible for being capable of competing in the current environment (Kalleberg, 2006). These practices are designed to increase business performance by enhancing employee ability, motivation, and opportunity to contribute to the organization's goals (Bayo-Moriones & Galdon-Sanchez, 2010; Rabl et al., 2014; Robineau et al., 2015). Also, although there is no universal definition of high-performance work systems (HPWS) (Boxall & Macky, 2009; Datta et al., 2005), they are broadly understood as an integrated set of HR practices that are hypothesized to create synergistic benefits (Boxall et al., 2009; Ho & Kuvaas, 2020; Jiang, Lepak, Hu, et al., 2012). In this sense, the leading trend in research on human resource management (HRM) has moved from individual practices to a set (or HRM system) of practices (Katou, 2017). Hence, organizations set up HR policies and design HRM systems based on their business strategy. We distinguish between HRM content, HRM process, and HRM as experienced (Katou, 2017). HRM content refers to individual practices that make up the HRM system (Boselie et al., 2005). HRM process refers to implementing systems within the organization (Díaz-Fernández et al., 2020), that is, how to transmit HRM content to employees. Finally, employee perceptions about HR policies play a decisive role, as they greatly influence their attitudes and behaviors and are essential to building a collaborative climate (Katou, 2017).

A considerable amount of research has been carried out to understand the linkage between HRM and performance (M. Armstrong & Stephen, 2014; Gerhart et al., 1992; D. Guest, 2011; Jiang, Lepak, Hu, et al., 2012). We usually understand performance as the achievement of organizational outcomes. In this sense, researchers have classified organizational outcomes into three primary groups related to HRM (Dyer & Reeves, 1995; Huselid, 1995): individual outcomes such as employee attitudes, employee behaviours, or satisfaction; operational outcomes such as productivity, efficiency, or innovation; and financial outcomes such as profit, return on equity or sales growth (Katou, 2017; Vermeeren, 2017). Initially, research mainly focused on operational and financial outcomes (Hafeez et al., 2020; Jiang, Lepak, Hu, et al., 2012). Some investigations have shown a positive relationship between the use of HPWS and overall firm performance (Appelbaum et al., 2000; Chen & Chen, 2021; Combs et al., 2006; Ho & Kuvaas, 2020; Huselid, 1995; Jiang, Lepak, Hu, et al., 2012; Jyoti & Rani, 2017; Katou, 2013, 2017); financial outcomes (Dastmalchian et al., 2020; D. Guest et al., 2003; Obeidat, 2017); and operational outcomes such as manufacturing performance (Bello-Pintado, 2015), team performance (Demortier et al., 2014; Hafeez et al., 2020), environmental performance (Rizvi & Garg, 2021; Singh et al., 2020), employee performance (Boon et al., 2011; Guthrie, 2001; Mira et al., 2019), or creativity (S. J. Shin et al., 2016; Song et al., 2020). However, other investigations have noted some uncertainties about cause and effect (D. Guest et al., 2000; Jiang, Lepak, Hu, et al., 2012; Ulrich, 1997), and some authors have commented that our understanding of how HR practices affect performance is still limited (D. Guest, 2011). In the same vein, some scholars

argue that this relationship is statistically weak (Paauwe, 2009), while others point out that research on the links between HR practices and firm performance is often managerially biased (Boxall & Macky, 2014). These different points of view suggest that there is no clear consensus for explaining the precise mechanisms of how HPWS works to reach the performance objectives (Block & Pickl, 2014; Demortier et al., 2014; D. Guest, 2011). This fact is commonly known as the black box phenomenon of HRM (Purcell et al., 2003). The explanation seems logical; many internal and external events affect organizations, making it difficult to ascertain what happens between HRM inputs and performance outputs (M. Armstrong & Stephen, 2014; Bakotić, 2016; Boselie et al., 2005). In this sense, some authors speak about causal ambiguity, which exists when there is more than one possible cause for an effect (Boxall et al., 2007). Put simply, HRM may be positively related to performance outputs, just as other economic or business factors do (M. Armstrong & Stephen, 2014).

Few investigations have tried to look inside the black box (Boselie et al., 2005). Nevertheless, studies in human resources provide clues to understanding the problem better. First, the effect of HRM on performance has been investigated from different approaches using a large variety of methodologies, research designs, practices examined, and outcomes (Boon et al., 2019; Combs et al., 2006; D. Guest, 2011; Marín-García & Martínez-Tomas, 2016). Concerning HRM practices, there are two different approaches. Contingency theorists defend the best-fit approach (Ehrnrooth & Björkman, 2012; Schuler & Jackson, 1987), considering that it may be worth adopting the HRM approach according to the specific needs of each organization. In contrast, the universalistic view considers that HR practices and context are mutually independent, and HRM must seek the best practices approach (Huselid & Becker, 1996; Pfeffer, 1994). Thus, a positive relationship exists between specific HR practices and performance, regardless of business context and environment (Lai et al., 2017). Second, HR practices are usually clustered into systems to maximize synergies (Marín-García & Conci, 2012). In this sense, the Ability-Motivation-Opportunity (AMO) framework has been widely accepted in HRM research for explaining the linkage between HR practices and performance outcomes (Marín-García & Martínez-Tomas, 2016). According to the AMO model, HPWS includes three dimensions: skill requirements, jobs designed to use those skills, and an incentive structure to induce discretionary effort (Appelbaum et al., 2000). Despite this agreement, there is no clear consensus on how to combine HR practices into systems because they can relate to one another in different ways (Boon et al., 2019; Dasí et al., 2021; Marín-García & Martínez-Tomas, 2016; Tuuli & van Rhee, 2021). Nonetheless, since most studies have used the additive approach (Boon et al., 2019), it remains unclear which approach better explains the interaction between the AMO bundles. Third, some studies emphasize no direct relationship between HRM and firm performance (M. Armstrong & Stephen, 2014; D. Guest, 1997) and highlight individual outcomes as mediating variables (Boselie, 2010; Boxall & Macky, 2009). They suggest that behavioural variables may mediate the HRM-performance relationship, in line with the social exchange theory (Blau, 1964), the resource-based view (Mahoney & Pandian, 1992; Wernerfelt, 1984), and the expectancy theory of motivation (D. Guest, 1997). According to these theories, HPWS can increase job satisfaction and employee engagement, which is likely to increase firm performance (Batt, 2002; Bryson & White, 2019; Prentice, 2022; P.-C. Wu & Chaturvedi, 2009). In recent years, many investigations have focused on individual-level outcomes, and some of them have shown positive effects on job satisfaction (Kloutsiniotis & Mihail, 2017; Latorre et al., 2016; Miao et al., 2021; Ollo-López et al., 2016; Vermeeren, 2017), employee engagement (Malik & Lenka, 2019; Tensay & Singh, 2020), affective commitment (Kloutsiniotis & Mihail, 2017; Miao et al., 2021), organizational citizenship behaviour (OCB) (Edgar et al., 2020; Morales-

Sánchez & Pasamar, 2019; Muisyo, Qin, Ho, & Julius, 2021; Salas-Vallina et al., 2021) or turnover and absence rate (Arthur, 1994; Kehoe & Wright, 2013). Fourth, some studies highlight the importance of exploring employee perceptions at the individual level. HRM research distinguishes between actual HRM and perceived HRM. The proposition is that perceptions, also called perceived organizational support (Latorre et al., 2016; Morales-Sánchez & Pasamar, 2019) or HRM climate (Gerhart, 2005), are likely to precede employee behaviours (Nishii et al., 2008) and determine levels of satisfaction and performance (Boon et al., 2014; Latorre et al., 2016). In this line, social cognitive theory explains that external factors are important for creating a psychological climate that encourages individuals to respond accordingly (Al Doghan et al., 2019; Katou, 2013). For this reason, over the last years, research has shifted from HRM content, or the parts that make an HRM system, to HRM process, or the way HR practices are communicated and perceived (Katou, 2017; Latorre et al., 2016). When employees perceive that HPWS are fair and they feel treated with respect, job satisfaction may increase, and perceptions of work pressure may decrease (Heffernan & Dundon, 2016). For this reason, it seems essential to place employee perceptions at the centre of the HRM-performance linkage. Fifth, contextual, organizational, or employee characteristics might also shape the HPWS effects (M. Armstrong & Stephen, 2014). Some studies note that in small or medium-sized firms (SMEs), investment in formal HRM may reduce employee motivation (Bryson & White, 2019), and the relationship between HRM and performance may be fostered through more informal mechanisms, such as direct channels of communication, close social relations or by providing a global vision of the aims of the organization (Lai et al., 2017). However, as the firm grows, a more systematized approach is needed; therefore, HRM tends to increase formalization and complexity (Bryson & White, 2019).

Given these issues, this study aims to explore the effects of HRM systems on individual outcomes as follows. First, according to the universalistic view, we have chosen a set of HRM practices based on what other investigations have used. This approach may reduce the variety of methodologies used in previous literature, and in this way, we contribute to creating a solid research framework for future research. According to the AMO framework, these practices are usually classified into three main groups (Appelbaum et al., 2000; Bailey, 1993a). In our study, we define the HRM system in terms of four HRM practices: staff training (ability-enhancing practices), intrinsic motivation to learn (motivation-enhancing bundle), job autonomy, and participatory decision-making (opportunity-enhancing bundle). Second, we aim to contribute to the HRM discussion by assessing which approach better explains how HR practices should be combined within systems. In line with previous research, most of the studies in our review use an additive approach, and very few studies have attempted to explore other methodologies. Hence, to determine which model better fits our sample, we use partial least square regression (PLS) to evaluate the predictive validity of both multiplicative and additive approaches for explaining attitudinal outcomes. Third, as the relationship between HRM and organizational performance is complex and seems unclear, we consider that integrating intermediate factors might shed light on the black box phenomenon of HRM. Previous research suggests that exploring the influence of the mediating path between HRM and organizational outcomes (distal outcomes) by integrating proximal outcomes (e.g., employee attitudes) may provide a more integrative model of how HRM systems influence distal outcomes (D. Guest, 1997; Katou, 2013, 2017). According to social exchange theory, the resource-based view, and the expectancy theory of motivation, we evaluate job satisfaction as an outcome of HRM practices, which in turn is likely to affect job performance. Fourth, we examine the effects of HRM practices at the individual level, placing employees at the centre of the study and focusing on their perceptions.



In this sense, we use the International Assessment of Adult Competencies (PIAAC) program, which collects data concerning employee perceptions on several items related to our research. Fifth, in line with contingent theory (Schuler & Jackson, 1987), we will introduce as control variables in the statistical analysis those contextual factors that may influence the relationship between HRM practices and job satisfaction.

We have organized the work as follows: first, we present the theoretical framework, structured around job satisfaction, AMO enhancing practices, and approaches to combine HR practices; secondly, we set out the methodology, defining the sample and the variables under study, as well as the statistical procedures; next, we discuss the results of the study; and finally, we state the main conclusions and the lines of future research.

## **Theoretical framework**

### **Job satisfaction**

Job satisfaction can be defined as a person's overall favourable or unfavourable evaluation of his job (Jawaad et al., 2019; Meier & Spector, 2015). In other words, Job satisfaction is how people feel about their jobs or different aspects of their jobs (Spector, 1997; Tett & Meyer, 1993; Vroom, 1964). Job satisfaction has been widely studied in the HRM field, and it has been considered a key factor for explaining commitment to the goals of the organization, turnover, and employees' health, among others, as well as for understanding performance outcomes (Locke & Latham, 1990; Meier & Spector, 2015). It is commonly accepted that employees' morale is a critical factor for success because workers who are happy at work will be committed to their work activities (Bakotić, 2016). On the contrary, it is also essential to consider the negative consequences of job dissatisfaction, such as increased absenteeism, turnover, accidents, negative behaviour, lack of loyalty, or lousy performance (Aziri, 2011; Spector, 1997).

There are two main approaches for measuring job satisfaction (Christen et al., 2006; Martins & Proença, 2014). The first approach determines an overall measure of job satisfaction and asks the respondents about their overall feelings about the job (Martins & Proença, 2014). The second approach determines job satisfaction by measuring how an individual is satisfied with several facets of the job. An example of this approach is the Job Descriptive Index (P. C. Smith et al., 1969), which measures the strengths and weaknesses of significant aspects of work: the nature of work, compensation and benefits, attitudes towards supervisors, relations with colleagues, and promotion opportunities (Aziri, 2011). Another example is the Minnesota Satisfaction Questionnaire (MSQ), a 5-point Likert scale that measures 20 work features such as moral values, independence, security, social status, recognition, creativity, or responsibility (Weiss et al., 1967). The job facets approach is likely to deliver a deeper understanding of the subject (Martins & Proença, 2014). However, most research focuses on the global level of job satisfaction (Meier & Spector, 2015). Moreover, some studies show that the global approach is better than the facet approach (Scarpello & Campbell, 1983; Tett & Meyer, 1993).

The effects of job satisfaction have been widely studied in the HRM literature. On the one hand, some authors have focused on employee outcomes, such as loyalty, absenteeism, burnout, cooperation, engagement, organization citizenship behaviour (OCB), or intention to quit (Aziri, 2011; Fabi et al., 2015; Katou, 2017; Latorre et al., 2016). Employee loyalty refers to the sense of belonging to the organization, which is one significant factor because a low level of loyalty may cause negative consequences (Aziri, 2011). Absenteeism, intention to quit, employee

turnover, lateness, or burnout, are seen as withdrawals behaviours and usually occur when the employee becomes disengaged from the organization (Boon et al., 2014; Marín-García, Miralles, et al., 2011). In this vein, some studies have highlighted the mediating role of job satisfaction in reducing these forms of disengagement (Fabi et al., 2015). Employee engagement, commitment, and cooperation are seen as positive effects of job satisfaction, and some studies have found positive correlations between these behaviours and some performance outputs such as productivity, employee accidents, or customer satisfaction (Gould-Williams, 2003; Harter et al., 2002; Ostroff, 1992). In contrast, other studies suggest that engagement is a key predictor of job satisfaction (Orgambidez-Ramos et al., 2014; Saks, 2006). Finally, organization citizenship behaviour refers to employees' voluntary commitment within an organization that goes beyond their contractual tasks (C. A. Smith et al., 1983). Implementing policies and procedures to improve employee engagement and reduce withdrawals behaviour may benefit both organizations and their employees. On the other hand, some investigations have dealt with the effects of job satisfaction on organizational outcomes. In fact, the relationship between job satisfaction and job performance has been described as the "Holy Grail" of industrial psychologists (Judge et al., 2001; Landy, 1989). This relationship is complex, and investigations carried out so far have not given a clear consensus due to contradictory findings (Al Doghan et al., 2019; Bakotić, 2016). Some studies have stood out the mediating effect of job satisfaction in the relationship between HR practices and employee performance (Lai et al., 2017; Latorre et al., 2016), and other authors have found a positive relationship between job satisfaction and employee performance (Mira et al., 2019). Nevertheless, many investigations have not discovered a significant correlation between these two variables (Daily & Near, 2000; Koys, 2001; Mira et al., 2019; Mohr & Puck, 2007; Ostroff, 1992; A. M. Ryan et al., 1996), or they have shown pretty weak intensity (Iaffaldano & Muchinsky, 1985).

Several factors are likely to affect the level of job satisfaction. In this sense, some studies have revealed a consistent correlation of specific variables with job satisfaction (Hackman & Oldham, 1976; Jablin, 1979; Muchinsky, 1977; Pincus, 1986; Sánchez-Sellero & Sánchez-Sellero, 2016). Although these potential antecedents often have interwoven impacts (Bakotić, 2016), they can be categorized as individual, environmental or organizational factors (Al Doghan et al., 2019). At the individual level, employee perceptions, personality traits, age, seniority, or tenure, among others, vary from one employee to another and may play an important role in employees' job satisfaction (Al Doghan et al., 2019; Aziri, 2011). In this vein, drawing on the five-factor model of personality (Digman, 1990; Goldberg, 1993), past studies have investigated the effect of personality traits on job satisfaction (Aziri, 2011; Bozionelos, 2004). The Big Five factors are extroversion, agreeableness, conscientiousness, emotional stability, and openness to experience (Goldberg, 1993). At the environmental level, job design, job demands, job scope, work variety, the level of autonomy, or simply having or not a challenging job may play an essential role as moderators of job satisfaction (Christen et al., 2006; Herzberg, 1974; Orgambidez-Ramos et al., 2014). Also, healthy working conditions related to physical comfort, temperature, noise level, or cleanliness might increase job satisfaction (Grawitch et al., 2009). Likewise, cooperative workgroups, a high level of participation, supportive supervisors, friendly interpersonal relationships, and care for well-being may improve the psychological climate, which could foster job satisfaction as well (Herzberg, 1974; Miao et al., 2021). At the organizational level, company fair policies, democratic culture, collaborative structure, leadership behaviour, salaries, intrinsic or extrinsic rewards, or promotion changes are likely to influence job satisfaction (Ahmad & Yekta, 2010; Prentice, 2022). In this regard, HR practices play an essential role (Heffernan & Dundon, 2016; Herzberg, 1974; Locke & Latham, 1990), and

some studies have found a significant relationship between HR practices and employee job satisfaction (Gould-Williams, 2003; Marín-García, Miralles, et al., 2011; Mira et al., 2019). Signalling theory indicates that HR practices send signals to employees about organizational intentions (Boon et al., 2014). In the same vein, some investigations have associated HR practices with a higher level of perceived organizational support and contract fulfilment, which in turn mediate the relationship between these practices and job satisfaction (Latorre et al., 2016). Furthermore, HR practices provide a good work environment where employees may feel valued (Fabi et al., 2015). Employee voice, job autonomy, or teamwork can help employees identify and exploit opportunities (Ehrnrooth & Björkman, 2012).

Our investigation aims to determine to what extent organizations can improve employee job satisfaction through HR policies that implement HPWP, among others. Based on an attitudinal perspective, job satisfaction is likely to positively affect employee outcomes, which could further affect organizational outcomes. Hence, we study the impact of HR practices at the individual level based on employee perceptions.

### **AMO enhancing practices**

HRM research has widely utilized the ability-motivation-opportunity (AMO) model (or AMO framework) (Appelbaum et al., 2000; Bailey, 1993a) for studying the relationship between HRM and performance (Beltrán-Martín & Bou-Llugar, 2018; Marín-García & Martínez-Tomas, 2016). The model's premise is that effective HRM drives positive discretionary behaviours associated with working beyond basic requirements (Purcell et al., 2003). Discretionary effort, in turn, will positively affect organizational outcomes. The model states that employee performance is a function of their abilities, motivation, and the opportunity to participate (Appelbaum et al., 2000). Thus, employee performance will be satisfactory when people have the appropriate skills for the job requirements, willingness to perform, and organizations provide them with opportunities to develop their capacities (Boselie, 2010; Boxall & Purcell, 2003; Marín-García, 2013). The notion of bundles highlights the integration of HRM practices into systems, which are supposed to take advantage of synergies and lead to higher performance (Appelbaum et al., 2000; Bayo-Moriones & Bello-Pindado, 2021). In this sense, the AMO model provides a comprehensive and structured theoretical framework by categorizing HRM practices into three different HRM bundles: ability-enhancing, motivation-enhancing, and opportunity-enhancing (Appelbaum et al., 2000; Bailey, 1993a; Lepak et al., 2006). Each bundle represents HR practices sharing the same objective (Beltrán-Martín & Bou-Llugar, 2018). Although we can consider these bundles separately to a certain extent, the boundaries of these dimensions are often diffuse. For instance, formal training practices might foster abilities, but they might also be enhanced by participative practices such as teamwork, usually classified into the opportunity bundle (Marín-García & Martínez-Tomas, 2016). However, by integrating these complex relationships in a single framework, the AMO model provides a broad picture of the intermediate variables between HRM and employee performance (Beltrán-Martín & Bou-Llugar, 2018). In fact, since its development, many of the published articles that explore HRM- performance have used this theoretical framework either explicitly or implicitly (Bayo-Moriones & Bello-Pindado, 2021; Boselie et al., 2005; Paauwe & Boselie, 2005), and the model has also been used to guide firms in their choice of HR practices (Bos-Nehles et al., 2013).

The ability dimension (A) refers to the employees' capacities to perform their tasks (Jiang et al., 2013), and it is frequently defined by using the acronym KSA (Fu et al., 2013). Hence, Ability-

enhancing practices are designed to ensure that employees acquire the appropriate knowledge, skills, and abilities (Bryson & White, 2019; Fu et al., 2013). These practices include formal training, rigorous selection, comprehensive recruitment, development, and performance assessment techniques to ensure that employees gain the necessary skills to fulfil the requirements of their job (Jiang, Lepak, Hu, et al., 2012; Kroon et al., 2013; Raidén et al., 2006). Training and development HRM practices increase the chances of developing new abilities, discovering new opportunities, and understanding complex problems. Recruitment and selection are devoted to attracting and choosing employees who fit the organization's goals (Bos-Nehles et al., 2013; Schimansky, 2014). Ability-enhancing practices play an essential role in determining how an employee perceives that they are a good fit for the job and make an outstanding contribution to improving employees' human capital (Takeuchi et al., 2007; Tian et al., 2016). Also, as these practices usually involve socialization processes, they relate to how employees feel connected to others at work (Tian et al., 2016). Some authors consider that the impact of ability-enhancing practices will be more considerable in jobs with greater demands performed by skilled workers (Subramony, 2009). Moreover, some scholars point out that the relationship between ability and performance is more remarkable for line managers than for frontline workers (Bayo-Moriones & Bello-Pindado, 2021). This statement is because line managers demand skills in more varied domains such as planning, coordination, supervision, problem-solving, information, negotiation, and leadership, among others (Bayo-Moriones & Bello-Pindado, 2021; Beltrán-Martín & Bou-Llusar, 2018; Subramony, 2009). Similarly, other authors argue that developing employees' abilities is crucial for SMEs to identify new opportunities, improve processes and develop new products and services (De Winne & Sels, 2010; Shahzad et al., 2019). Finally, other investigations claim that ability is indispensable for ensuring performance. In this view, motivation and opportunity act as moderators, but they cannot directly influence performance when the necessary abilities are not guaranteed (Bos-Nehles et al., 2013).

Motivation (M) can be defined as the internal factors that initiate and maintain a particular behaviour (James, 1989; Marín-García & Conci, 2012). Also, it refers to the willingness of employees to make discretionary efforts (Bayo-Moriones & Bello-Pindado, 2021; Jiang et al., 2013). Self-determination theory distinguishes between extrinsic and intrinsic motivation (Marín-García & De Miguel, 2001; R. Ryan & Connell, 1989). The former refers to doing something in exchange for a reward, while the latter is doing something for one's interest (Serrano-Cinca et al., 2005). Some authors argue that extrinsic rewards focus on short-term gains, whereas intrinsic motivation connects with long-term commitment (Schimansky, 2014). However, both categories are closely related, and some authors maintain that the lack of extrinsic rewards might affect intrinsic motivation (Bos-Nehles et al., 2013). Motivation-enhancing practices are designed to encourage employees to perform beyond the basic requirements of their jobs (Purcell et al., 2003). These practices could be related to intrinsic or extrinsic motivation, calling for different HR actions (Andreeva & Sergeeva, 2016). Some scholars consider that motivation directly impacts performance, whereas both ability and opportunity moderate the motivation effect (Hughes, 2007; Knies & Leisink, 2014). Employees with poor skills may become demotivated by complex tasks (Bos-Nehles et al., 2013). Similarly, some authors argue that the motivation bundle is the most important for explaining operational performance, particularly for blue-collar employees (Bello-Pintado, 2015; Jiang, Lepak, Hu, et al., 2012). This positive effect also applies to managers, although to a lesser extent, because for these positions is difficult to standardize the evaluation of performance outputs. Also, since these positions are more varied and challenging, they are likely to provide intrinsic motivation,

and extrinsic motivators are less needed to foster efforts (Bayo-Moriones & Bello-Pindado, 2021; Hauff et al., 2021). The most common motivation-enhancing practices are related to extrinsic incentives (e.g., pay for performance, workplace bonuses, or profit-shares) or non-economic forms of motivation such as performance appraisal, job security, recognition, internal promotion, and work-life balance opportunities. In contrast, intrinsic motivation practices such as motivation to learn, willingness to perform, or team satisfaction are less common in previous literature (Marín-García & Martínez-Tomas, 2016). Extrinsic incentives have been confirmed to help align both individual and organizational objectives, as they promote employees' engagement and positively influence employees' efforts towards organizational goals (Drummond & Stone, 2007; Schneider et al., 2005). Also, some authors support the incentives based on the group rather than individual performance since they increase employee linkages (Tian et al., 2016).

According to job design theories and empowerment literature, the opportunity dimension (O) considers the work environment (Gerhart, 2005; Kroon et al., 2013). The HRM context defines opportunity as a set of circumstances that make it possible to do something (Schimansky, 2014), and it is related to the employee involvement in the decision-making process (Bayo-Moriones & Bello-Pindado, 2021; Marín-García & De Miguel, 2001; Schimansky, 2014). Opportunity may also be understood in terms of employee voice, a concept that covers elements such as knowledge sharing, organizational citizenship behaviour (OCB), or communication initiatives, among others (Demortier et al., 2014; Kaufman, 2013; Shahzad et al., 2019). Previous research suggests that participation and teamwork are central domains of HPWS (Bryson & White, 2019). In this sense, some scholars argue that motivated employees who possess the abilities to perform will not foster performance unless organizations provide them with appropriate opportunities to apply their skills (Jiang, Lepak, Hu, et al., 2012; Lepak et al., 2006). Also, empowered employees will show higher levels of job satisfaction (Fabi et al., 2015), and supportive activities may decrease stress, absenteeism, and turnover rates (Boon et al., 2014). Organizations willing to foster participation should decrease the distance between employees and management, promote dialogue across organizational hierarchies, implement procedures for sharing knowledge, and providing to employees a higher level of autonomy for performing their tasks (Appelbaum et al., 2000; Marín-García & De Miguel, 2001; Minbaeva, 2013). Opportunity-enhancing practices are essential for both managers and frontline workers. However, some authors argue that the positive effect between this bundle and performance is more substantial for line managers because they perform activities such as planning and controlling, and if they do not have opportunities to participate in the decision-making process, they cannot do their job (Bayo-Moriones & Bello-Pindado, 2021). We can group the opportunity-enhancing practices into four bundles: employee-involvement practices, knowledge-sharing practices, autonomy-enhancing practices, and job design practices (Marín-García & Martínez-Tomas, 2016). Employee-involvement practices foster employee participation in the decision-making process, such as team working, quality circles, or self-directed work teams (Boon et al., 2014; Boselie et al., 2005; Ramsay et al., 2000). These practices will likely strengthen links to others within the workplace (Tian et al., 2016). Knowledge-sharing practices aim to provide employees with strategic information such as financial or operational performance and foster communication among employees and management. Additionally, these practices enhance employee voice by implementing suggestion or complaint systems and in-place surveys (Boselie et al., 2005; Jiang, Lepak, Hu, et al., 2012). Autonomy-enhancing practices promote autonomy in the decision-making process and their tasks, enabling the employees to better fit between skills, personal attributes, and the roles they perform (Tian et al., 2016). Also, they are related to flexibility and

skill variety (Drummond & Stone, 2007; Jiang, Lepak, Hu, et al., 2012). Finally, job design practices involve workplace design, including rules, processes, procedures, and functions (Boon et al., 2014; Jiang, Lepak, Hu, et al., 2012), as well as implementing favorable work conditions, including social, psychological, and physical aspects (Block & Pickl, 2014).

The AMO model has been studied using various methodologies, providing different results (Boon et al., 2019; Marín-García & Martínez-Tomas, 2016). In some cases, the model has found empirical support, detecting a positive relationship between AMO-enhancing practices and different outcomes (Appelbaum et al., 2000; Huselid, 1995; Iddekinge et al., 2018; Kaufman, 2015; Obeidat et al., 2010). Nevertheless, some authors argue that the link between bundles of practices and organizational outcomes remains unclear (D. Guest, 2011; Huff, 2018; Jiang, Lepak, Hu, et al., 2012; Raineri, 2017). This is partly due to the different sets of HR practices used across HRM literature (Boselie et al., 2005; Subramony, 2009). Put simply; it is hard to state solid conclusions concerning which combination of practices is a better fit for understanding the HRM-performance relationship (Marín-García & Martínez-Tomas, 2016).

We propose using a set of HRM practices based on prior investigations to address this issue. This approach is aligned with the universalistic perspective, which argues that the effective contribution of HRM systems to one specific organization can be expanded to other organizations, no matter the context (Huselid, 1995; Schimansky, 2014). Although HRM practices vary across investigations, some commonly appear in many studies (Perello-Marín & Ribes-Giner, 2014). In this sense, some researchers point out the existence of "core HRM practices": selection and training programs to provide the appropriate abilities; rewards and incentives agreements to increase motivation; and information-sharing and involvement initiatives to engage employees towards the operational goals (Marín-García & Conci, 2013; Shih et al., 2007).

### **AMO Theories**

HRM literature has considered the AMO model from different perspectives, according to how the bundles of HR practices interact. However, scholars have not agreed on which of these perspectives better explains the relationship between the three AMO bundles (Demortier et al., 2014; Knies & Leisink, 2014). Throughout our literature review, we have found several perspectives. The classic ones are the additive (or summative) and the multiplicative (interactive or complementary) approaches. Also, some scholars consider that this relationship may be understood differently and suggest other perspectives such as the combinative approach, the constraining-factor theory, or the singly-necessary-and-jointly-sufficient theory (Dasí et al., 2021; Hauff et al., 2021; Tuuli & van Rhee, 2021). However, the latter's presence in the HRM literature is insignificant.

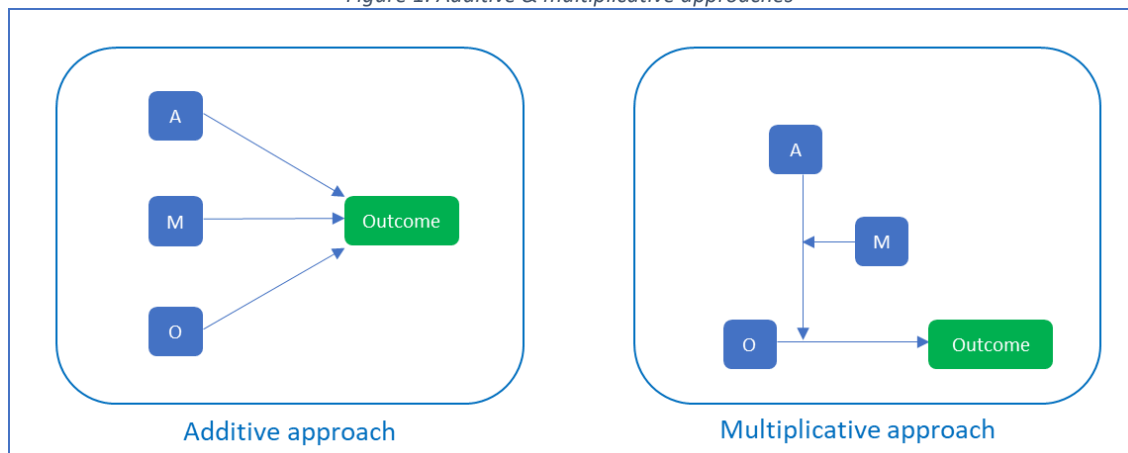
The additive approach is usually described by the function  $P = f(A + M + O)$  and accepts that HR practices have independent effects, and increasing levels in one of the three AMO bundles directly and positively contribute to performance (Boxall, 2003; Delery, 1998). Hence, the absence of one factor can be compensated by higher levels in the other two (Dasí et al., 2021; Kim et al., 2015; Morales-Sánchez & Pasamar, 2019). An advantage of the additive approach is that different combinations of HR practices can be used to increase performance (Becker & Huselid, 1998). In support of this approach, some scholars point out that each AMO bundle aims at different objectives, and some organizations might only need specific ability, motivation, or opportunity-enhancing practices to enhance performance (Kroon et al., 2013). However, other

authors state that this approach cannot capture the synergies among HR practices (Becker & Gerhart, 1996), as if practices are weighted equally, it is impossible to properly test the interactions within HR systems (Boon et al., 2019). Also, it seems reasonable to consider that a minimal level of each dimension is needed as, for instance, highly motivated employees will not perform better if they do not have the required abilities (Marín-García & Martínez-Tomas, 2016). Nonetheless, despite repeated calls for using other approaches, most studies use an additive approach (Boon et al., 2019; Marín-García & Martínez-Tomas, 2016), and only a few studies combine practices in other ways (Boon et al., 2019).

The multiplicative approach may be reflected by the function  $P = f(A \times M \times O)$  and claims that ability, motivation, and opportunity must all be present to some degree for performance to occur (Tuuli & van Rhee, 2021); if any of them has low levels, performance will be affected (Blumberg & Pringle, 1982; Bos-Nehles et al., 2013; Delery, 1998; Vroom, 1964). This makes sense since the lack of abilities, for instance, can seldom be counterbalanced by motivation or organizational support (Dasí et al., 2021). In this vein, some authors argue that if one of the factors is absent, performance becomes zero (Charles et al., 1986; Ozcelik & Uyargil, 2015). Some scholars point out a lack of research confirming this approach (Bos-Nehles et al., 2013; Obeidat et al., 2010). We have only found a few articles considering the multiplicative approach either theoretically or practically (Bello-Pintado, 2015; Beltrán-Martín & Bou-Llusal, 2018; Block & Pickl, 2014; Cai et al., 2020; Dasí et al., 2021; Gould-Williams & Gatenby, 2010; Ho & Kuvaas, 2020; Hosseingholizadeh et al., 2016; Kim et al., 2015; Obeidat et al., 2010; Pham et al., 2020).

Figure 1 describes both the additive and the multiplicative approaches

Figure 1: Additive & multiplicative approaches

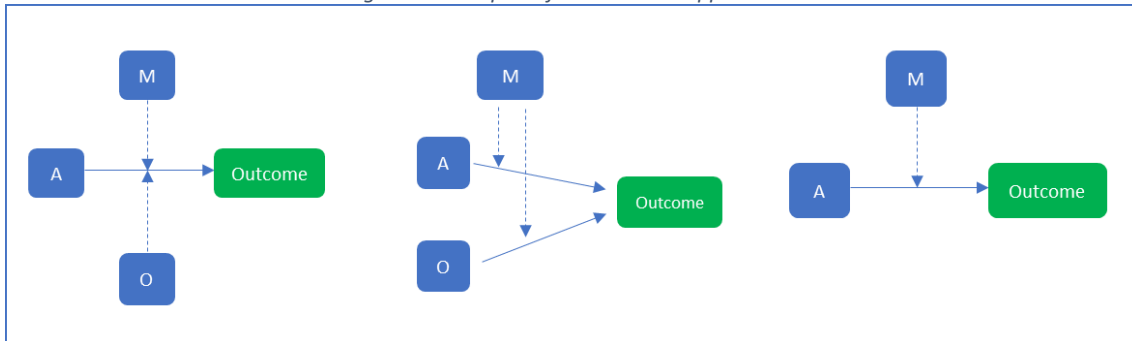


Source: Authors

Other studies argue that some bundles prevail over others, and the AMO model is better described by combining both the additive and the multiplicative approaches (Marín-García & Martínez-Tomas, 2016). Therefore, the combinative approach proposes that there are bundles directly affecting performance, while there are others that may moderate this relationship. In this line, some authors argue that ability is essential for ensuring performance. Both motivation and opportunities are also important, but they cannot enhance performance without the minimum level of abilities (Bos-Nehles et al., 2013). In this case, performance may be calculated by the function  $P = A(1 + M + O)$ . Similarly, other authors suggest that ability and motivation affect performance, and opportunity moderates the motivation effect (Knies & Leisink, 2014). Likewise, some scholars claim that motivation enhances performance and is moderate by both opportunities and abilities (Hughes, 2007). Finally, other scholars have found a synergistic effect

between two bundles (two-way interactions) (Alba et al., 2021; Andreeva & Sergeeva, 2016; Bello-Pintado, 2015; Bello-Pintado & Garcés-Galdeano, 2019; Beltrán-Martín & Bou-Llusar, 2018; Cai et al., 2020; Chung & Pak, 2021; Gould-Williams & Gatenby, 2010; Guerci et al., 2017; Hosseingholizadeh et al., 2016; Pham et al., 2020). Figure 2 provides a few examples of combinative approaches

Figure 2: Examples of combinative approaches



Source: Authors

Once reviewed the AMO model according to how the bundles interact with each other, the remaining question is how these perspectives empirically perform in predicting job satisfaction. Few studies in the literature evaluate a given sample with different approaches. According to some authors, the multiplicative approach is supposed to examine better the synergies between the categories of the AMO model (Kim et al., 2015; Obeidat et al., 2010). Some studies support this view (Dasí et al., 2021). Therefore, we expect that multiplicative approaches perform better than the additive perspective to explain the interaction between the AMO bundles and job satisfaction. The methods section analyses the multiplicative and additive approaches through the HRM-Job satisfaction relationship.

## Method

### Data

Our data source is the Survey of Adult Skills, which forms part of the International Assessment of Adult Competencies (PIAAC) program (OECD, 2015, 2016). **PIAAC** is a worldwide study by the Organization for Economic, Co-operation, and Development (OECD) and is intended for adults aged 16 to 65. The survey is designed to be valid internationally and obtain comparable results. It aims to provide a comparative analysis of skill-formation outcomes. The sampling unit is the individual. The sample design is a stratified multistage clustered area sample (but countries can boost sample size and oversample for national purposes) (Kirsch et al., 2020). The first round was conducted between 2011 and 2012 within 24 participating countries, including Spain. The OCDE released data and preliminary results of this round in 2013. The second cycle began in 2018, with results published in 2024.

The questionnaire gathers demographic characteristics, education and training, personal background, and employment status (OECD, 2015, 2016). The initial Spanish sample has 6055 observations. However, we restrict the sample to employed workers or self-employed. As a result, 3386 cases were retained, which were fairly equal in terms of sex, with 1813 men (53.5%) and 1573 women (46.5%). Most participants of the sample (77.8%) work in the private sector (n=2634), while 20.4% are public workers, and only 1.2% work in non-profit organizations (e.g., volunteer services). Concerning the size company, 1251 participants (36.9%) work in



microenterprises (1 to 9 employees); 868 (25.6%) in small enterprises (10 to 49 employees); 511 (15.1%) in medium-sized enterprises (50 to 249 employees); and 380 (11.2%) in large enterprises (250 employees or more).

## **Measures**

### ***Dependent variable***

Job satisfaction is the dependent variable. We use an overall measure of job satisfaction, in which respondents evaluate their overall feelings about the job (Martins & Proença, 2014). Previous studies argue that the global approach could be as good as the several facets approach (Bonavia & Marin-Garcia, 2019; Giraldo-O'Meara et al., 2014; Hauff et al., 2021; Marín-García, Bonavia, et al., 2011; Scarpello & Campbell, 1983; Tett & Meyer, 1993). In this sense, the PIAAC questionnaire asks, "All things considered, how satisfied are you with your current job?". This is measured on a 1 (extremely satisfied) to 5 (extremely dissatisfied) Likert scale. Therefore, high values mean job dissatisfaction.

### ***Independent variables***

HRM practices were assessed using items from the PIAAC questionnaire, which includes HR practices corresponding to ability-enhancing, motivation-enhancing, and opportunity-enhancing bundles. Continuous learning activities at work serve as a proxy for *ability* since we consider that they are adequate predictors in the AMO model context (Hauff et al., 2021; Jiang, Lepak, Han, et al., 2012). In this sense, some studies argue that learning activities can promote job satisfaction if their focus and usefulness meet employee expectations (Fuentes-del-Burgo & Navarro-Astor, 2013)

Continuous learning activities at work were measured with three items: learning from co-workers/supervisors, learning-by-doing, and keeping up to date. All items were measured using a 5-point scale (1-never; 2-less than once a month; 3-less than once a week but a least once a month; 4-at least once a week but not every day; 5-every day). Other studies have used the educational level as a proxy for ability (Dasí et al., 2021), which will be used to analyse possible heterogeneity in future research.

Employee *motivation* was measured using the learning approach based on the self-determination learning style (Biggs, 2014; Edgar et al., 2020; Gorges et al., 2017; C. H. Yu et al., 2019). People who relate new ideas to real life, who like learning new things, who get to the bottom of problems, or who figure out how different ideas fit together, usually are concerned with improving their knowledge. Also, employees with a higher level of self-determination feel more satisfied with their jobs and show better willingness to get involved in assigned tasks and generate and develop new ideas (Li et al., 2021; Manganelli et al., 2018; Sarmah et al., 2022; Van den Broeck et al., 2021). Respondents answered six questions on a 1 (not at all) to 5 (to a great extent) 5-point scale. These items have been previously used as indicators of intrinsic motivation or goal orientation (O'Keefe et al., 2013; R. M. Ryan & Deci, 2020). Previous literature shows that these variables predict both involvements in learning and skills achievement (Gorges et al., 2017).

To measure employees' *opportunity* to participate, we included five PIAAC questionnaire items related to the participatory decision-making process and job autonomy HRM practices. Concerning job autonomy, respondents were required to answer how often they planned their

activities and organized their time. Regarding participation in the decision-making process, they were required to answer the extent to which their current job allowed them to decide the sequence of tasks, how to do the work, and the work speed. Items were measured using a 5-point scale (1-never; 2-less than once a month; 3-less than once a week but a least once a month; 4-at least once a week but not every day; 5-every day). In our study, we analyze each people's influence on the decisions, regardless of whether they occupy management positions. Management position was used as an observed heterogeneity variable and was measured using a dichotomic question (yes/no) concerning whether people supervise other employees' work. Consistent with previous studies (Dasí et al., 2021), we also include how often they deal with complex problems (ill-defined, requires defining goals and resolving impasses, and require the use of multiple technology environments) as an observed heterogeneity variable. This item was measured using a 5-point scale (1-never; 2-less than once a month; 3-less than once a week but a least once a month; 4-at least once a week but not every day; 5-every day).

### ***Control variables***

In line with previous research, we include the following control variables: age (Felstead et al., 2015; Gorges et al., 2017), economic sector (private, public, or non-profit) (Felstead et al., 2015; Schouteten et al., 2021; W. Yu et al., 2020), company size (people work for your employer at the place where they work: 1-1 to 10 people; 2-11 to 50 people; 3-51 to 250 people; 4-251 to 1000 people; 5-more than 1000 people) (Schouteten et al., 2021). Other variables like gender (Felstead et al., 2015; Gorges et al., 2017), occupation (Felstead et al., 2015), or level of education (Dasí et al., 2021; Gorges et al., 2017) can be the origin of unobserved heterogeneity.

### **Analysis**

The multi-item scale (ability, motivation, opportunity) for construct measurement has been considered reflective (Jarvis et al., 2003; Marin-Garcia & Alfalla-Luque, 2019a; Sarstedt et al., 2022). Since we are using secondary data, we use partial least square regression (PLS) to evaluate the models' predictive validity. Also, we will use latent variable scores in subsequent analyses outside the SEM context to identify possible heterogeneity variables and check the out-of-sample predictive capacity of the models (Marin-Garcia & Alfalla-Luque, 2019a; Sarstedt et al., 2022).

We use a four-step process for evaluating the measurement model validity:

1. Item reliability: Loadings  $> 0.7$
2. Internal consistency reliability: Cronbach's  $\alpha$  values and Dijkstra and Henseler  $\rho_A$  values to be between 0.70 and 0.95
3. Convergent validity test: average variance extracted (AVE) values  $> 0.50$
4. Discriminant validity test: Heterotrait-monotrait ratio of correlations (HTMT)  $< 0.90$ , and Fornell-Larcker criterion threshold (although the latter is not very precise if the loadings of all the indicators are in a very narrow range of values (0.67-0.84), as it happens with our data) (Marin-Garcia & Alfalla-Luque, 2019a; Sarstedt et al., 2022).

We use a five-step process for evaluating the model structure (Marin-Garcia & Alfalla-Luque, 2019a):

1. VIF values  $< 3$
2. In-sample explanatory power:

- R2 values: Poor (0.1-0.25); moderate (0.25-0.45); high (0.5-0.75); R2 values higher than 0.8 could mean overfit.
  - Blindfolding-based cross-validated redundancy measure: Q2 values (poor predictive relevance: 0-0.25; moderate: 0.25-0.50; high: >0.50)
3. Out-of-sample predictive power:
    - Using K-folds = 10 & 10 repetitions: RMSE or MAE values must be smaller in PLS than by using the LM benchmark
  4. Path coefficient significance: p-values of t-distribution < 0.05; or bootstrap confidence interval do not include 0
  5. Path coefficient relevance:
    - f2 values: low >0.02; moderate >0.15, high >0.35. Path values near 0 have little relevance

For controlling observed heterogeneity, we analyse the invariance of the measurement model focusing on manager position and complex problem items. The procedure to assess measurement invariance of the composite model (MICOM) consists of 5000 permutations and a significant level equal to 5% with two tails. For controlling the measurement model, we analyse whether the compositional invariance is fulfilled (permutation p-values > 0.05 show that construct indicator weights do not differ much between groups). Next, we focus on mean differences and logarithms of variance values. If permutation-based confidence intervals include the mean and logarithm of variances' original values, then we consider full measurement invariance. On the contrary, we conclude that there is a partial measurement invariance, which is a sufficient condition to compare the group paths and to observe whether there are significant path differences (Marin-Garcia & Alfalla-Luque, 2019a).

We complete the analyses by controlling unobserved heterogeneity (in the case of considering only one group for both the analysis and parameter estimation). We use finite mixture partial least squares (FIMIX-PLS), a latent class segmentation method, to uncover unobserved heterogeneity in the structural model. We choose the number of segments for which AIC, BIC, CAIC, HQ, MDL5, and LNL have lower values; or those for which EN, NFI, and NEC have higher values. AIC tends to bias segment recommendation upwards, whereas MDL5 tends to bias it downwards. If there is more than one segment with a high number of cases, data will be classified according to prediction-oriented segmentation (POS) (Marin-Garcia & Alfalla-Luque, 2019b). The model with a lower BIC value is the best in terms of in-sample predictive performance (Danks et al., 2020; Sarstedt & Danks, 2022). The model with fewer PLS predicts errors and is the most suitable for out-sample predictive performance (Marin-Garcia & Alfalla-Luque, 2019b; Shmueli et al., 2016). The analyses have been carried out using the 3.3.9 version of smartPLS and version 22 of SPSS (SPSS-inc., 2013).

## Results

Table 2 summarizes descriptive statistics of the items

*Table 2: Descriptive Statistics*

Category	Item	N	Min.	Max.	Mean	Std. Deviation	Skewness	Stat Kurtosis
Job Satisfaction	D_Q14 Current work - Job satisfaction	3374	1	5	2,12	,797	1,082	1,878
Control Variable	AGE_R Person resolved age from BQ and QC check (derived)	3386	16	65	40,61	11,137	,029	-,821

Control Variable	D_Q03 Current work - Economic sector	3365	1	3	1,23	,449	1,686	1,804
Control Variable	Size- Amount of people working for an employer	3010	1	4	2,01	1,044	,652	-,825
Ability	D_Q13a Current work - Learning - Learning from co-workers/supervisors	3023	1	5	3,36	1,527	-,298	-1,423
Ability	D_Q13b Current work - Learning - Learning-by-doing	3372	1	5	3,87	1,421	-,874	-,730
Ability	D_Q13c Current work - Learning - Keeping up to date	3374	1	5	3,43	1,549	-,329	-1,479
Motivation	I_Q04b About yourself - Learning strategies - Relate new ideas to real life	3369	1	5	3,43	,955	-,315	-,076
Motivation	I_Q04d About yourself - Learning strategies - Like learning new things	3385	1	5	4,22	,778	-1,008	1,507
Motivation	I_Q04h About yourself - Learning strategies - Attribute something new	3382	1	5	3,81	,893	-,595	,400
Motivation	I_Q04j About yourself - Learning strategies - Get to the bottom of difficult things	3383	1	5	3,83	,954	-,656	,176
Motivation	I_Q04l About yourself - Learning strategies - Figure out how different ideas fit together	3352	1	5	3,46	1,030	-,383	-,280
Motivation	I_Q04m About yourself - Learning strategies - Looking for additional info	3385	1	5	4,19	,811	-1,029	1,427
Opportunity	F_Q03a Skill use work - How often - Planning own activities	3373	1	5	3,98	1,556	-1,151	-,407
Opportunity	F_Q03c Skill use work - How often - Organising own time	3372	1	5	4,22	1,430	-1,565	,744
Opportunity	D_Q11a Current work - Work flexibility - Sequence of tasks	3377	1	5	3,23	1,349	-,244	-1,086
Opportunity	D_Q11b Current work - Work flexibility - How to do the work	3376	1	5	3,35	1,291	-,400	-,872
Opportunity	D_Q11c Current work - Work flexibility - Speed of work	3376	1	5	3,30	1,249	-,310	-,810
Observed Heterogeneity	Manager Managing other employees	3375	0	1	,28	,449	,984	-1,033
Observed Heterogeneity	F_Q05b Skill use work - Problem-solving - Complex problems	3369	1	5	2,73	1,417	,210	-1,312

### **Measurement model**

Concerning item reliability (table 3), all values are higher than 0.7, except for I\_Q04b (loading = 0.668). Regarding internal consistency reliability, Cronbach's  $\alpha$  values and Dijkstra and Henseler  $\rho_A$  values are between 0.70 and 0.95, except for ability, which is near the cut-off-value (0.675). Average variance extracted (AVE) values are used for determining convergent validity. These values are higher than 0.50 in every case. Also, we confirm discriminant validity both with the Heterotrait-monotrait ratio of correlations (HTMT) (table 4) and the Fornell-Larcker criterion (table 5) (although the latter is not very precise if the loadings of all the indicators are in a very

narrow range of values (0.67-0.84), as it happens with our data) (Marin-Garcia & Alfalla-Luque, 2019a; Sarstedt et al., 2022).

Table 3: Outer loadings

	Original Sample (O)	Standard Deviation (STDEV)	T Statistics ( O/STDEV )	P Values	2.5%	97.5%
AGE_R <- Age	1,000	0,000				
D_Q03 <- Economic Sector	1,000	0,000				
D_Q11a <- Opportunity	0,804	0,017	47,930	0,000	0,768	0,834
D_Q11b <- Opportunity	0,837	0,015	54,732	0,000	0,805	0,865
D_Q11c <- Opportunity	0,754	0,021	36,031	0,000	0,709	0,792
D_Q13a <- Ability	0,758	0,029	26,144	0,000	0,698	0,810
D_Q13b <- Ability	0,827	0,019	43,544	0,000	0,786	0,860
D_Q13c <- Ability	0,742	0,028	26,887	0,000	0,683	0,792
D_Q14 <- Job Dissatisfaction	1,000	0,000				
F_Q03a <- Opportunity	0,735	0,026	28,510	0,000	0,681	0,782
F_Q03c <- Opportunity	0,717	0,027	26,864	0,000	0,659	0,764
I_Q04b <- Motivation	0,668	0,035	19,105	0,000	0,593	0,732
I_Q04d <- Motivation	0,740	0,024	30,365	0,000	0,686	0,781
I_Q04h <- Motivation	0,757	0,025	29,853	0,000	0,702	0,801
I_Q04j <- Motivation	0,720	0,029	24,441	0,000	0,653	0,770
I_Q04l <- Motivation	0,719	0,028	25,902	0,000	0,660	0,770
I_Q04m <- Motivation	0,701	0,029	23,853	0,000	0,639	0,754
Size <- Size	1,000	0,000				

Table 4: Discriminant validity test (Heterotrait-Monotrait ratio (HTMT))

	Ability	Age	Economic Sector	Job Dissatisfaction	Motivation	Opportunity
Age	0,130					
Economic Sector	0,129	0,132				
Job Dissatisfaction	0,212	0,057	0,108			
Motivation	0,299	0,072	0,055	0,123		
Opportunity	0,224	0,094	0,046	0,164	0,194	
Size	0,142	0,024	0,303	0,063	0,073	0,166

Table 5: Discriminant validity test (Fornell-Larcker criterion)

	Ability	Age	Economic Sector	Job Dissatisfaction	Motivation	Opportunity	Size
Ability	0,776						
Age	-0,110	1,000					
Economic Sector	0,109	0,132	1,000				
Job Dissatisfaction	-0,174	-0,057	-0,108	1,000			
Motivation	0,217	-0,064	0,050	-0,111	0,718		
Opportunity	0,107	0,086	-0,032	-0,150	0,157	0,771	
Size	0,119	0,024	0,303	-0,063	0,066	-0,152	1,000

### Structural model

We have compared two models. Figures 3 (direct relationships model) and 4 (multiplicative model) summarize the results.

Figure 3: Direct relationships model

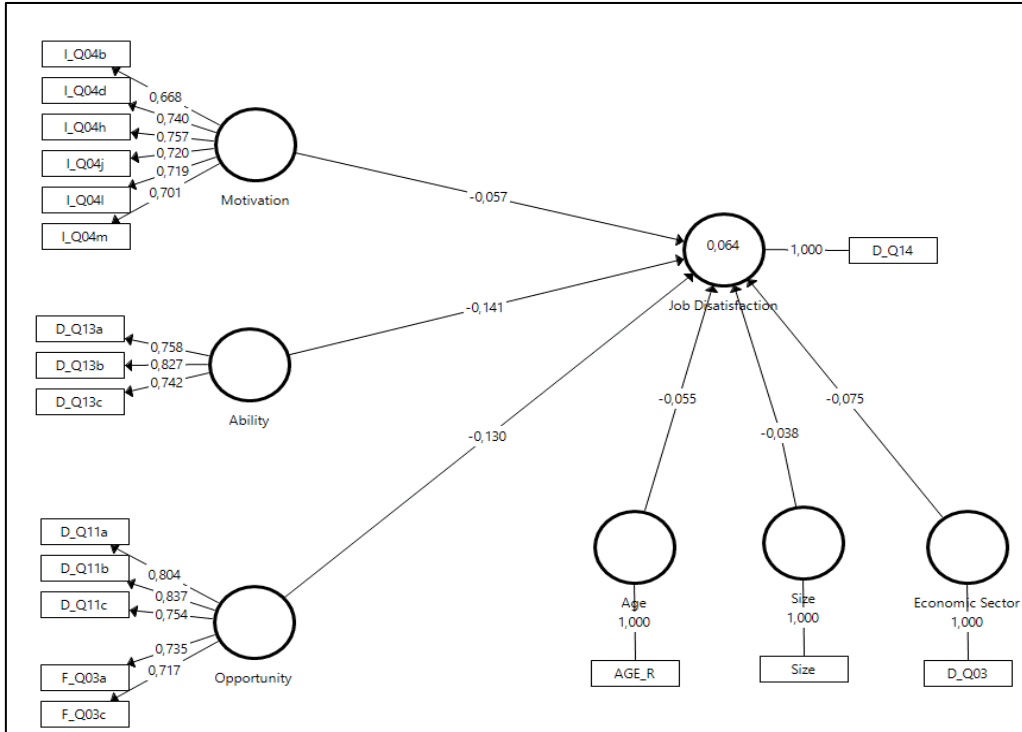
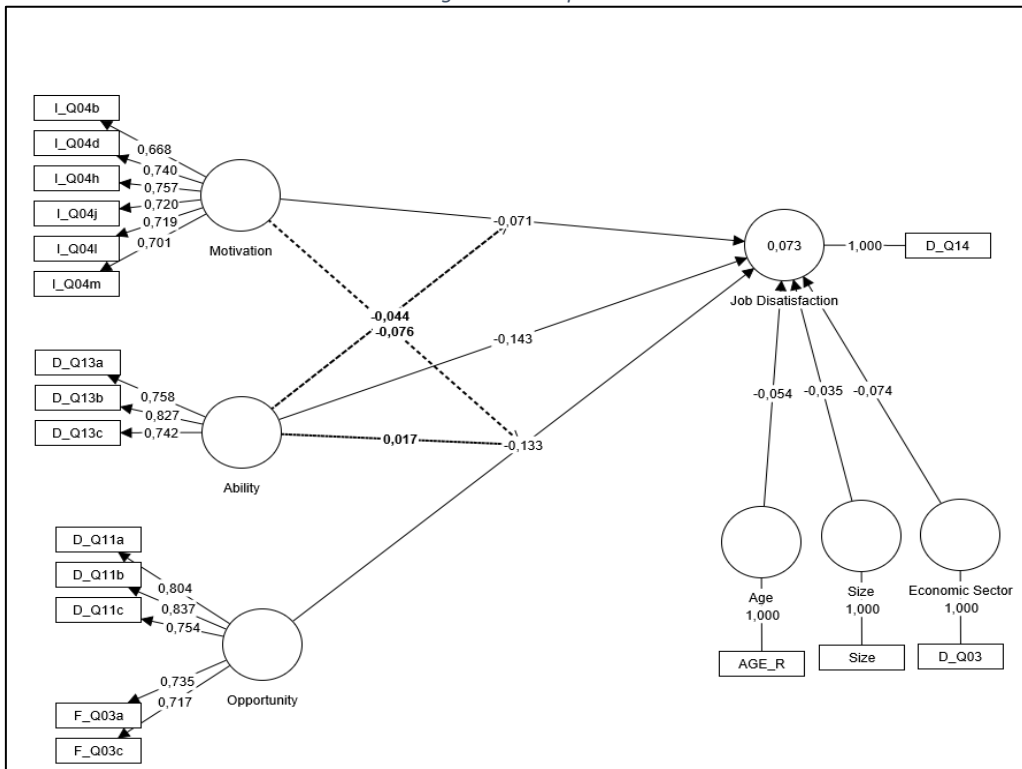


Figure 4: Multiplicative model



VIF values are less than 2.2 in every case. In-sample explanatory power is poor in both the direct model ( $R^2=0.064$ ) and the multiplicative model ( $R^2=0.073$ ). This also applies to blindfolding-based cross-validated redundancy measures ( $Q^2=0.059$  - direct model;  $Q^2=0.066$  - multiplicative model). Control variables show a significant effect, with similar values to motivation's direct effect, but less intense than both ability and opportunity effect. All direct path coefficients are significant since zero is not included in the bootstrap confidence interval and p-values  $< 0.05$ . However, concerning the path coefficient relevance, all  $f^2$  values are below 0.02 and therefore have little relevance. Only ability reaches the bottom of the low value.

Table 6: Path coefficients for direct & multiplicative model

Direct model	Path	$f^2$	Standard Deviation	T Statistics	P Values	2.5%	97.5%
Age -> Job Dissatisfaction	-0,055	0,003	0,018	3,058	<b>0,002</b>	-0,090	-0,020
Economic Sector -> Job Dissatisfaction	-0,075	0,005	0,016	4,636	<b>0,000</b>	-0,106	-0,043
Size -> Job Dissatisfaction	-0,038	0,001	0,018	2,147	<b>0,032</b>	-0,072	-0,003
Ability -> Job Dissatisfaction	-0,141	0,020	0,018	7,678	<b>0,000</b>	-0,179	-0,107
Motivation -> Job Dissatisfaction	-0,057	0,004	0,019	2,997	<b>0,003</b>	-0,098	-0,023
Opportunity -> Job Dissatisfaction	-0,130	0,017	0,019	6,814	<b>0,000</b>	-0,167	-0,092
Multiplicative model	Path	$f^2$	Standard Deviation	T Statistics	P Values	2.5%	97.5%
Age -> Job Dissatisfaction	-0,054	0,003	0,018	3,044	<b>0,002</b>	-0,088	-0,018
Economic Sector -> Job Dissatisfaction	-0,074	0,005	0,016	4,545	<b>0,000</b>	-0,106	-0,042
Size -> Job Dissatisfaction	-0,035	0,001	0,018	1,987	<b>0,047</b>	-0,069	0,001
Ability -> Job Dissatisfaction	-0,143	0,020	0,018	7,847	<b>0,000</b>	-0,179	-0,108
Motivation -> Job Dissatisfaction	-0,071	0,005	0,019	3,817	<b>0,000</b>	-0,111	-0,039
Opportunity -> Job Dissatisfaction	-0,133	0,017	0,019	6,966	<b>0,000</b>	-0,171	-0,097
AO -> Job Dissatisfaction	0,017	0,000	0,019	0,856	<b>0,392</b>	-0,021	0,054
MA -> Job Dissatisfaction	-0,044	0,002	0,019	2,342	<b>0,019</b>	-0,080	-0,007
MO -> Job Dissatisfaction	-0,076	0,007	0,020	3,824	<b>0,000</b>	-0,115	-0,037

Concerning two-way interactions (AO; MA; MO), results are significant when ability acts as a moderator in the motivation-job dissatisfaction relationship or when motivation is the moderator in the opportunity-job dissatisfaction relationship. Figures 5 and 6 show the moderation effects. When the ability value is low (below the mean's standard deviation), it barely modifies the direct effect of motivation (the slope of the line is almost flat). However, when ability values are higher than the mean's standard deviation, then the slope is steeper, which means that employees not only perceive less dissatisfaction than those with low levels of motivation (the green line is always below the red line) but also the effects are more significant

than in the case of adding direct effects of ability and motivation (red and green lines diverge, and the line's slope is significant). Similarly, we observe more pronounced effects in the motivation-opportunity interaction. In this case, among employees with low levels of opportunity, levels of dissatisfaction are similar regardless of the motivation level. However, as the opportunity to participate increases, job dissatisfaction decreases considerably more in employees with higher motivation levels (green line) than in those with low motivation levels (red line). In other words, green and red lines intersect in the case of low opportunity levels, but they diverge, and the green line is always below as opportunity levels increase. In this case, the red and green slope difference is significant.

Figure 5: Slope analysis (Ability-Motivation)

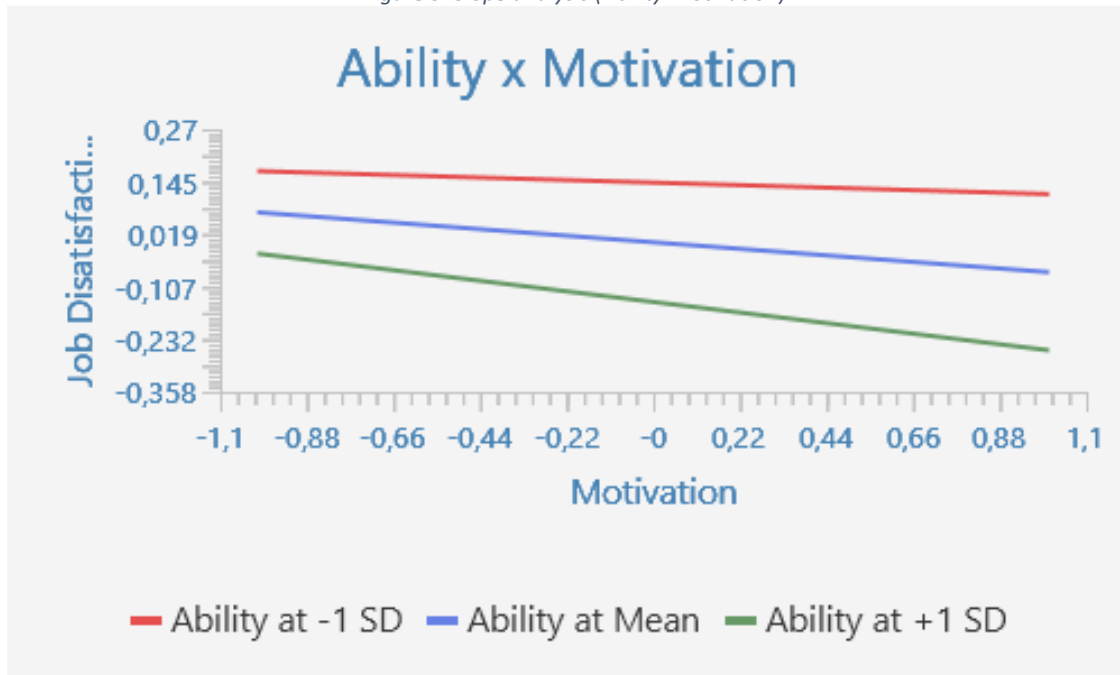
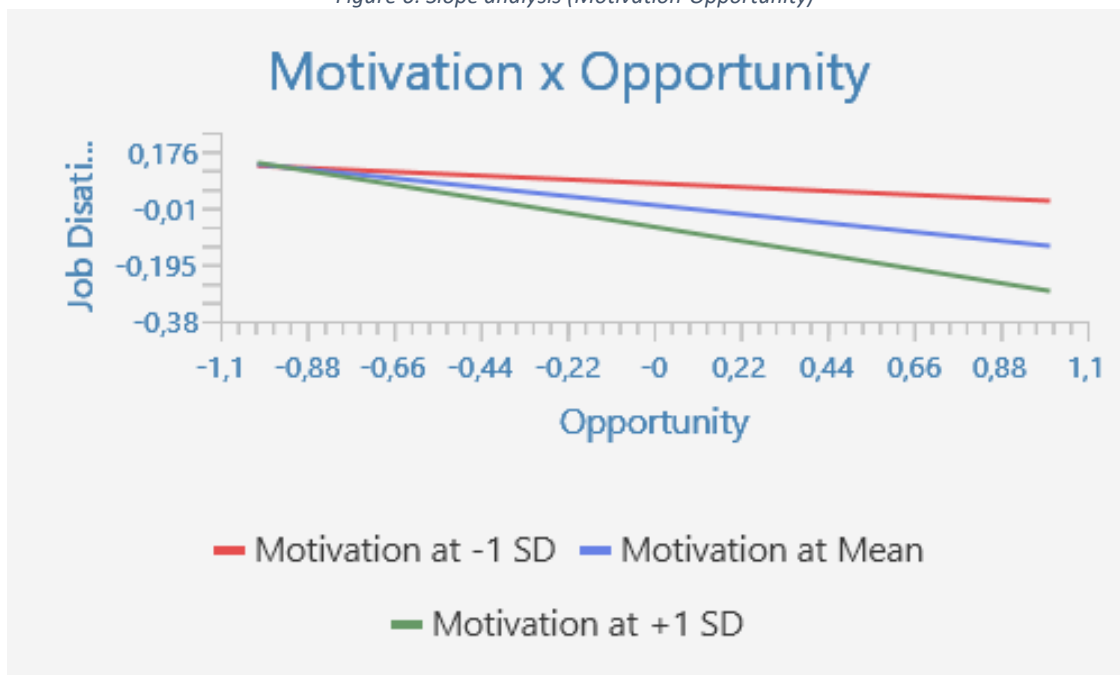


Figure 6: Slope analysis (Motivation-Opportunity)





We assessed the predictive capacity of the direct relationships model (figure 3) and the multiplicative-two-way interaction model (figure 4). Table 7 shows the results. The standardized root mean square residual value (SRMR) is equal in both models, and it is within acceptable limits (<0.08). However, the validity of conducting a model fit assessment remains unclear when analysing data using PLS-SEM. According to the BIC value, the multiplicative model has a better predictive capacity as it has a smaller BIC value.

Table 7: Predictive capacity

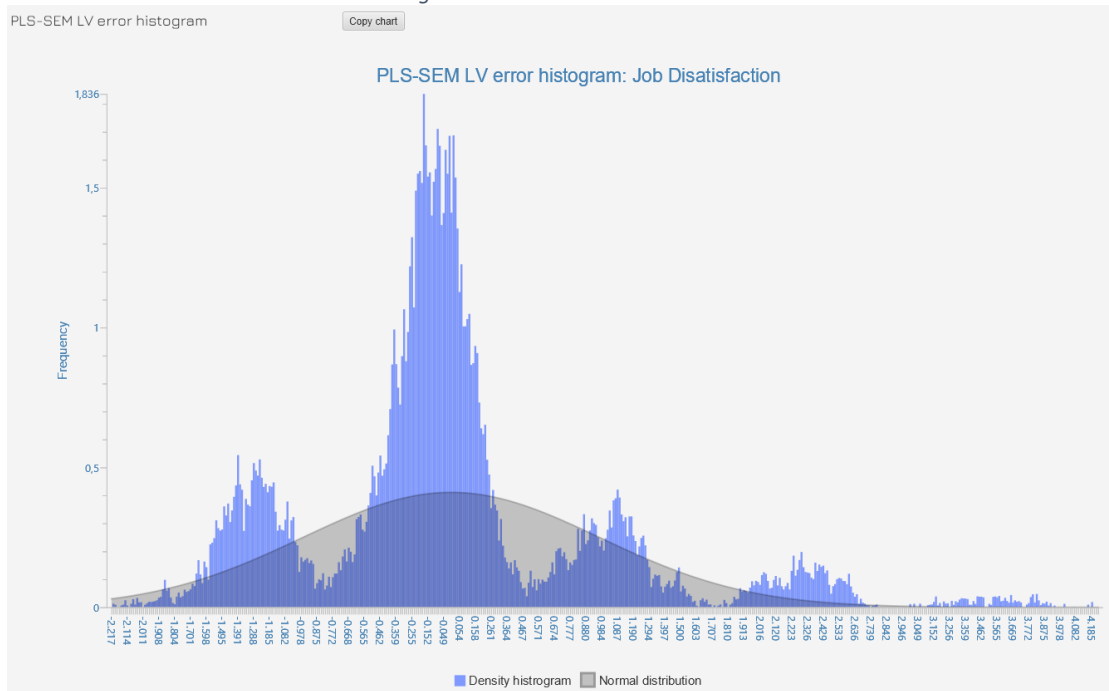
	Direct Model	Multiplicative Model
Fit summary SRMR	0,069	0,069
BIC (Bayesian Information Criteria)	-152,562	-158,891

Out-of-sample predictive power is valid for both the direct and the multiplicative models, as they outperform a linear regression predictive capacity. Mean absolute error (MAE) and root mean square error (RMSE) can be used to compare predictive capacity. The lower the RMSE or MAE, the better the predictive capacity. In case of asymmetric error distribution, or when it does not follow a normal distribution, it is preferable to use MAE (Hair Jr. et al., 2019). In our case, as shown in figure 7, it is advisable using MAE as the predictive capacity criterion. Table 8 shows the results. The direct model has lower values of MAE, and therefore it is considered better in terms of out-of-sample predictive capacity.

Table 8: PLS predicts Job dissatisfaction (D\_Q14)

	PLS			LM			Dif PLS-LM	
	RMSE	MAE	Q <sup>2</sup> _predict	RMSE	MAE	Q <sup>2</sup> _predict	RMSE	MAE
Direct model	0,768	0,525	0,059	0,769	0,530	0,056	-0,001	-0,004
Multiplicative model	0,765	0,528	0,066	0,767	0,531	0,062	-0,001	-0,003

Figure 7: PLS-SME error distribution



Therefore, the multiplicative model has better in-sample predictive power (better R2; better BIC), although the direct model has better out-of-sample predictive capacity. However, differences are minor, and without performing more sophisticated analyses such as the cross-validated predictive ability test (CVPAT), we cannot say that differences between the two models are significant.

We have analysed the invariance of the measurement model previously to assess whether differences arise when comparing employees with or without managerial positions or between people facing complex problems or not. In this sense, we find partial measurement invariance in the multiplicative model when comparing people in managerial positions. However, it does not apply within the opportunity construct when comparing people facing complex problems to those who face simple problems (D\_Q11c weight varies significantly from one subsample to the other). Similarly, we find partial measurement invariance in the direct model when comparing employees with managerial positions, and it does not apply to people facing complex problems. Again, differences are found within the opportunity construct (D\_Q11c). Commonly, employees with managerial positions show high values within the three bundles: ability, motivation, and opportunity. Also, they frequently are slightly older, less dissatisfied, and work for larger companies. The same characteristics apply to people facing complex problems.

As a result of measurement invariance analysis, we can only compare the paths and R2 values of the employee's subsample with the managerial positions subsample. We find significant differences in the ability-job dissatisfaction path in the direct model. Differences within the other paths and R2 values are not significant (table 9).

Table 9: Paths coefficients (direct model)

Path Coefficients	Original Difference (Manager (0.0) - Manager (1.0))	2.5%	97.5%	Permutation p-Values
Ability -> Job Dissatisfaction	0,099	-0,079	0,080	<b>0,015</b>
Age -> Job Dissatisfaction	-0,003	-0,083	0,077	<b>0,957</b>
Economic Sector -> Job Dissatisfaction	-0,044	-0,073	0,067	<b>0,201</b>
Motivation -> Job Dissatisfaction	-0,005	-0,073	0,091	<b>0,908</b>
Opportunity -> Job Dissatisfaction	0,031	-0,090	0,077	<b>0,435</b>
Size -> Job Dissatisfaction	-0,059	-0,080	0,075	<b>0,137</b>
R Square				
Job Dissatisfaction	-0,031	-0,044	0,028	<b>0,104</b>

Concerning the multiplicative model, we find significant differences in the ability-job dissatisfaction path and the ability moderation effect over motivation. Differences within the other paths and R2 values are not significant (table 10). The ability-job dissatisfaction relationship is more intense among people who occupy managerial positions (path: -0.212) than those without managerial positions (path: -0.114). Also, the ability-motivation interaction is higher among managers (-0.105) than non-managers (-0.022).

Table 10: path coefficients (multiplicative model)

Path Coefficients	Original Difference (Manager (0.0) - Manager (1.0))	2.5%	97.5%	Permutation p-Values
AM -> Job Dissatisfaction	0,083	-0,084	0,080	<b>0,048</b>
AO -> Job Dissatisfaction	-0,009	-0,082	0,085	<b>0,837</b>
Ability -> Job Dissatisfaction	0,098	-0,079	0,083	<b>0,017</b>
Age -> Job Dissatisfaction	-0,012	-0,080	0,078	<b>0,761</b>
Economic Sector -> Job Dissatisfaction	-0,040	-0,072	0,070	<b>0,255</b>
MO -> Job Dissatisfaction	-0,022	-0,084	0,086	<b>0,621</b>
Motivation -> Job Dissatisfaction	0,003	-0,071	0,085	<b>0,945</b>
Opportunity -> Job Dissatisfaction	0,039	-0,079	0,084	<b>0,348</b>
Size -> Job Dissatisfaction	-0,063	-0,078	0,076	<b>0,108</b>
R Square				
Job Dissatisfaction	-0,040	-0,050	0,030	<b>0,069</b>

Although results show significant relationships between the AMO model variables and job dissatisfaction, the intensity of this relationship is very low. As a result, observed heterogeneity cannot help to find stronger relationships between the groups. Therefore, we complete the analysis by verifying unobserved heterogeneity (table 11). In other words, we wonder if it is appropriate to consider only one group for parameter estimation or if different homogeneous groups are found within the sample.

In table 11, we can observe that four or 6-groups solutions have similar global performance. The 6-group solution performs the best for AIC, BIC, CAIC, and HQ indicators but very poorly for LnL, EN, and NFI. The 4-groups solution has an intermediate performance in almost all indicators, being the best for MDL5. Moreover, the 4-groups solution allows having three groups with enough size (between a third and a fourth of the sample), just like the 5-groups solution. The 6-group solution improves it slightly, allowing a fourth group which includes 10% of the sample. Finally, R2 values within the 4-group solution are higher than in the original samples: one group with low (but relevant) R2 values (almost 10%) and two groups with high R2 values (95% and 78%). Concerning the 6-group solution, the first group's R2 value is worse than the total sample, and the last two groups (R2=1; size < 5% of the sample) are probably inadequate (over-specified).

AIC indicator tends to bias the segment decision upwards, whereas MDL5 tends to bias towards groups with fewer segments. Therefore, and considering our previous results, we propose considering two different solutions: 4-groups and 6-groups, which should be classified by prediction-oriented segmentation (POS) to allow future research to attempt to identify which variables explain the belonging to these groups.

Table 11: Unobserved heterogeneity analysis (FIMIX)

	group:2	group:3	group:4	group:5	group:6
AIC (Akaike's Information Criterion)	5713,147	5375,935	4001,351	3637,095	3488,624
AIC3 (Modified AIC with Factor 3)	5728,147	5398,935	4032,351	3676,095	3535,624
AIC4 (Modified AIC with Factor 4)	5743,147	5421,935	4063,351	3715,095	3582,624
BIC (Bayesian Information Criteria)	5803,932	5515,138	4188,973	3873,135	3773,082
CAIC (Consistent AIC)	5818,932	5538,138	4219,973	3912,135	3820,082
HQ (Hannan Quinn Criterion)	5745,726	5425,889	4068,681	3721,800	3590,704
MDL5 (Minimum Description Length with Factor 5)	6287,069	6255,949	5187,457	5129,293	5286,913
LnL (LogLikelihood)	-2841,574	-2664,967	-1969,676	-1779,548	-1697,312
EN (Entropy Statistic (Normed))	0,700	0,796	0,800	0,817	0,754
NFI (Non-Fuzzy Index)	0,767	0,814	0,795	0,797	0,694
NEC (Normalized Entropy Criterion)	942,006	640,594	627,367	574,110	774,136
<b>Segment sizes (% of the sample)</b>					
Seg1	0,561	0,564	0,386	0,338	0,332
Seg2	0,439	0,386	0,324	0,324	0,252
Seg3		0,051	0,244	0,244	0,223
Seg4			0,046	0,052	0,100
Seg5				0,042	0,050
Seg6					0,043
<b>R2</b>					
Seg1	0,080	0,082	0,094	0,055	0,052
Seg2	0,115	0,080	0,926	0,927	0,942
Seg3		1,000	0,773	0,776	0,790
Seg4			1,000	1,000	0,974
Seg5				1,000	1,000
Seg6					1,000

## Discussion

HRM systems are based on the premise that the combined effect of HRM practices is greater than the sum of each taken individually (Becker & Gerhart, 1996; Fabi et al., 2015). This statement is based on synergies or complementarities among HRM practices (Delery, 1998; Ho & Kuvaas, 2020). According to the AMO model proposition, the integration of skills, motivation, and opportunity bundles is mutually reinforced (Appelbaum et al., 2000; Boxall & Purcell, 2003). In this sense, some authors argue that organizations must adopt all three bundles to guarantee performance (MacDuffie, 1995). The complementarity assumption suggests the interaction between the three bundles. However, most studies use an additive approach, which might be not able to capture synergies (Boon et al., 2019). This study aims to address the repeated calls for testing the interactions, by comparing two different approaches to combine HRM practices: the additive and the multiplicative approach.

In recent years, HRM research has focused on individual outcomes. Some authors argue that perceptions are essential to determining employee attitudes and behaviours, resulting in organizational performance (Gerhart, 2005; Nishii et al., 2008). Job satisfaction is one of the most common facets of employee well-being (Cropanzano & Wright, 2001; Van De Voorde et al., 2012). According to our results, only a few studies explore the HRM-job satisfaction linkage within the AMO context. Some have shown positive results (Nadeem & Rahat, 2021; Ollo-López et al., 2016; Wu & Chaturvedi, 2009), while others have proved its positive mediating or moderating effects (Fabi et al., 2015; Lai et al., 2017). Nevertheless, some studies have revealed contradictory results (Garmendia et al., 2021; Mira et al., 2019).

Contrary to our expectations, our study does not yield concluding results. Overall, the proposed models cannot predict more than 10%, at best, of job satisfaction variation at the individual level. Hence, if job satisfaction is a mediator between HIWS and organizational outcomes, we conclude that according to the available data, the AMO model's effect on performance seems low in Spain. However, the AMO model allows articulating HR policies and practices in a structured manner and provides solutions within the HRM complex framework of relationships (Beltrán-Martín & Bou-Llusar, 2018; Marín-García & Martínez-Tomas, 2016). Outcomes both at individual and organizational levels rely to a limited extent on human resource management, as well as on many other elements affecting the AMO model: individual factors inherent to employees and organizational factors such as HR practices, among many others (Ahmad & Yekta, 2010; Al Doghan et al., 2019; Heffernan & Dundon, 2016; Herzberg, 1974; Katou, 2013; Locke & Latham, 1990; Prentice, 2022). Some studies show better results when examining the influence of the AMO model on individual outcomes (Salas-Vallina et al., 2021). Similarly, other investigations show a positive correlation between job satisfaction and a moderate adoption of HR practices, which decreases or is even harmful if an exhaustive implementation is carried out since it can affect employee well-being (Ho & Kuvaas, 2020). However, none of them analyses the predictive capacity of the models but rather their fit. Simpler models have fewer restrictions than complex ones and usually work better with samples other than those used to calibrate them (Liengard et al., 2021).

However, some interesting issues emerge from the analyses carried out. First, we have studied variations in the direct model (additive). Five analyzes have been carried out according to the data subsets: all employees; employees with and without managerial positions; employees facing complex problems or not. When analyzing the sample, we observe that values, although small, are significant. This may be because of the large sample size (>3000 observations). All analyses reveal a greater influence of practices related to the ability bundle, followed by opportunities. As we have proposed, the motivation bundle effect is always limited and hardly influences the model's predictive capacity. Our results are in line with previous research. Some studies show a higher effect on ability and opportunity bundles than on motivation (Beltrán-Martín & Bou-Llusar, 2018; Guerci et al., 2017; Pham et al., 2020; Vermeeren, 2017). Other studies argue that ability is the stronger predictor of outcomes (Jyoti & Rani, 2017). Other authors consider that only skills directly affect results, which are moderated by opportunities, motivation, or both (Bos-Nehles et al., 2013; Cai et al., 2020; Guerci et al., 2017). In the same vein, some studies show that employees perceive training and development activities to be the most crucial HR activities to guarantee their employability (Katou, 2013). Although we have not found remarkable differences between employees who perform complex tasks and those who do not, the influence of all the AMO bundles and the overall results of this subgroup are slightly greater. However, these results must be taken cautiously because we did not find partial measurement invariance within this group, and therefore the comparison of subsamples is not

entirely adequate (Marin-Garcia & Alfalla-Luque, 2019b). These findings are in line with previous research proving that the effect of HR systems on job satisfaction is more remarkable when considering an exciting job as a moderator variable (Lucia-Casademunt et al., 2012; Ollo-López et al., 2016). In this sense, some studies use job complexity as a measure of motivation (Collins & Kehoe, 2017). Interesting Jobs are often associated with greater complexity and require qualified employees; therefore, organizations with complex jobs are more likely to use high-involvement practices (Bayo-Moriones et al., 2015; Subramony, 2009). Concerning employees with managerial positions, those who lack responsibilities are below average. On the contrary, results considerably improve among employees with managerial positions, although they are not especially relevant. Our results allow us to analyse the differences within these subgroups. We have found significant differences between abilities and job satisfaction in the direct and multiplicative models. This relationship intensifies within employees having managerial positions, in line with previous research affirming that responsibility positions cover a greater range of tasks and, therefore, require a wide variety of knowledge and skills (Bayo-Moriones & Bello-Pindado, 2021; Beltrán-Martín & Bou-Llusar, 2018; Lucia-Casademunt et al., 2012). Moreover, in the multiplicative model, there are also significant differences in the interaction between abilities and motivation, which are greater within employees with managerial positions. These results support previous investigations showing that skills mediate the relationship between motivation and overall outcomes (Hosseingholizadeh et al., 2016). Also, our results indicate that managers and employees who solve complex problems show higher levels in the AMO bundles are slightly older, more satisfied, and work for larger companies.

On the other hand, we have examined the multiplicative model through double interactions between the AMO bundles. According to our results, although again it is little conclusive, the multiplicative model better predicts variations in job satisfaction (better in-sample predictive capacity, but worst out-of-sample). However, future analyses would be needed to confirm these findings and ascertain whether the prediction differences are statistically significant. Our results are consistent with previous studies, which show that multiplicative models perform better than summative ones (Dasí et al., 2021). In this vein, another study conducted among 6000 employees from 6 European countries, evaluating whether the AMO bundles have synergistic or summative effects, shows that multiplicative models perform better than the summative ones in a predictive capacity. However, the path between some bundles is not significant, and the results are inconclusive (Guerci et al., 2017). Other investigations, however, show that results are better predicted by additive models (as indicated by the lowest BIC values), although they argue that all three bundles must be present at least at minimal levels (Tuuli & van Rhee, 2021). Our data seem to support this view as far as out-of-sample is concerned. We have found significant results in the skills-motivation interaction ( $M \times A$ ), as well as in the motivation-opportunities interaction ( $M \times O$ ), but not in the skills-opportunities interaction ( $A \times O$ ). In the skills-motivation interaction, low values of abilities barely moderate motivation, but at high levels, the results are higher than the sum of the parts, confirming the synergistic effects of HR practices. In the motivation-opportunities interaction, results are also significant, with higher effects. When opportunities to participate are low, motivation does not affect satisfaction.

In contrast, when opportunities increase, so does job satisfaction, especially in highly motivated employees. In line with our study, some authors argue the convenience of considering double interactions instead of triple interactions. However, they point out that higher effects are shown in  $A \times O$  and  $A \times M$  interactions but not in  $M \times O$  because neither motivation nor opportunity alone can predict performance (Bos-Nehles et al., 2013). Similarly, other investigations show higher positive effects in the  $A \times O$  interactions than in the triple interaction (Pham et al., 2020).

Although our results indicate that the ability bundle has a higher effect, we have found significant results in the M x O interaction but not in the M x A interaction.

Finally, in the unobserved heterogeneity analysis, we have identified at least four subgroups, and out of all three, the model's explanatory capacity improves ( $R^2$  value > 0.78). Future research should clarify if it is possible to identify which variables explain the belonging to each cluster or if, on the contrary, this is a result of over-identification of the model, and we cannot find a practical contribution to building a helpful moderation theory.

## **Conclusion**

Our study contributes to the HR literature in three ways. First, we have assessed the differences between summative and multiplicative approaches of the AMO model. There is a lack of consensus concerning how the AMO bundles interact, and few studies are carrying out similar analyses. Thus, this study contributes to enriching the knowledge by adding one more case to build a solid theoretical framework. Determining how the model works could help managers to propose practical solutions regarding high involvement systems. Second, we explore the predictive capacity of the AMO model at the individual level, focusing on job satisfaction. Although interest in individual outcomes and employee perceptions has recently grown, most research focuses on organizational-level outcomes, and few studies use job satisfaction as the dependent variable. Some authors suggest that individual outcomes could mediate the relationship between HR systems and organizational performance. Therefore, it is worth exploring how HR policies and practices affect employee well-being and satisfaction. Finally, this article explores intrinsic motivation, which we have built as motivation to learn. In the existing literature, finding variables related to extrinsic motivation, such as performance incentives or performance assessments, is common. However, even though intrinsic motivation is usually related to long-term positive behaviours, it is rare to find HR practices related to it. Hence, this study contributes to filling this gap.

The PIAAC survey provides a large, unbiased, and representative population sample. However, one limitation of this study is that we cannot intervene in the survey design to explore other factors related to high-involvement practices or other variables moderating job satisfaction. Also, we do not have longitudinal data, which limits the possibility of establishing causal relationships. This limitation is well-known in the HRM literature since longitudinal studies are expensive and require a long time.

Our research identifies possible future research lines. First, conducting the same analysis with PIAAC data from different countries would be interesting to determine whether sociocultural differences affect the proposed model. Moreover, according to the PIAAC webpage, future series will include socio-emotional and work-environment factors, which will allow the inclusion of new variables to improve the model. Another future research line would be using different sources of information to verify if results are similar with different samples. On the other hand, we have identified several factors that could affect job satisfaction, as we point out in the theoretical framework. We have focused on factors at the organizational level, specifically on the effect of HR practices. Also, we have used company size, economic sector, and employee age as control variables. In future research, exploring other factors at both organizational and individual levels, such as job design, organizational culture, company policies, leadership styles, or personality traits, would be interesting. In this regard, some studies emphasize the

importance of employee perceptions. Adding new factors could better explain variations between studies when assessing job satisfaction.

In addition, we have compared the summative and the multiplicative models. So far, few studies have evaluated other proposals, such as the constraining factor or the Singly-Necessary-and-Jointly-Sufficient theory (Dasí et al., 2021; Siemsen et al., 2008; Tuuli & van Rhee, 2021). However, it would be interesting to include them in the future research agenda. The constraining factor theory states that the additive effect of the AMO bundles depends on which of the three factors is the lowest one, and increasing its level will strengthen the other factors as well (Siemsen et al., 2008; Tuuli & van Rhee, 2021). HRM policies aiming to enhance motivation and opportunities will be severely affected if employees do not have the appropriate abilities to perform, acting the ability dimension as a constraint. This assumption is based on empirical evidence that usually suggests additive effects of the HRM bundles (Tuuli & van Rhee, 2021). However, in contrast to the additive approach, this theory proposes that separate additive models of AMO bundles should be estimated depending on whether ability, motivation, or opportunity is the constraining factor (the lowest factor). Some studies suggest that the constraining-factor theory is better than multiplicative and additive approaches in predicting some employee behaviours (Siemsen et al., 2008). Other investigations, however, have yielded mixed results (Dasí et al., 2021; Kettinger et al., 2015). Conversely to the previous theories commented, the Singly-Necessary-and-Jointly-Sufficient theory is based on other types of causality: singly necessary and jointly sufficient. Each of the three AMO factors is singly necessary, and thus they can limit performance (Hauff et al., 2021; Tuuli & van Rhee, 2021). That is to say, the minimum value of one factor acts as a bottleneck, limiting the effect of the other two, which cannot compensate for the lowest one (Dasí et al., 2021; Tuuli & van Rhee, 2021). The jointly sufficient premise implies that the bottleneck is removed if the lowest factor is improved, and performance will increase. Hence, performance is determined by the function  $P = \min \{A, M, O\}$  (Tuuli & van Rhee, 2021). Most empirical studies follow an additive sufficiency logic, assuming that the absence of HRM practices in one AMO domain can be compensated by HRM practices in the others (Hauff et al., 2021). However, this does not correspond to the idea of necessity implied in the original AMO model (Appelbaum et al., 2000; Jiang, Lepak, Han, et al., 2012; Lepak et al., 2006), where single HRM activities are required, and cannot be compensated for ensuring performance. Some authors argue that the necessary condition cannot be analyzed through regression-based methodologies, suggesting the use of necessary condition analysis (NCA).

Finally, in future analyses, we would like to check the results of PLS prediction with CVPAT, which allows us to detect differences between the interaction models. Likewise, we will try to identify which variables explain the clustering of unobserved heterogeneity in the groups identified through discriminant analysis (Prediction-Oriented Segmentation). We also plan to use data mining techniques (cluster analysis, bootstrap forest, boosted tree, and data visualization) to check if a set of PIAAC variables can explain the belonging to these groups (C. H. Yu et al., 2019).



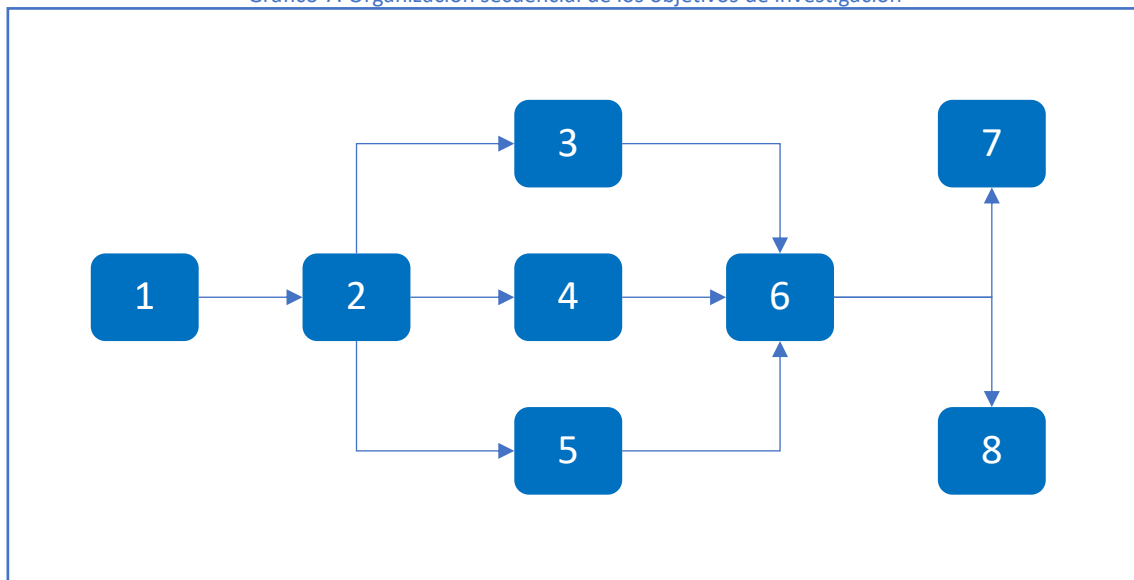
## Capítulo 6: Discusión general de los resultados



## 1. Introducción

La tesis se ha elaborado por compendio de artículos, que hemos diseñado para dar respuesta a los objetivos de investigación planteados inicialmente y detallados en la sección de introducción. Esta modalidad es coherente con nuestro propósito inicial de construir el conocimiento de manera gradual mediante una colección de publicaciones que son independientes, pero que se estructuran alrededor de un tema central de investigación. Esta modalidad permite asimismo organizar la investigación en etapas bien definidas, que son sometidas a los procesos de revisión de las revistas académicas y por tanto se acompañan con indicadores sólidos de calidad. A continuación, se presentan los resultados en base a los objetivos de investigación planteados al inicio de la tesis y descritos en el punto 3.2 de la sección de introducción. Hemos elaborado esta sección a partir de la síntesis de los resultados de cada uno de los artículos que componen la tesis. El gráfico 7 muestra la organización secuencial de dichos objetivos.

Gráfico 7: Organización secuencial de los objetivos de investigación



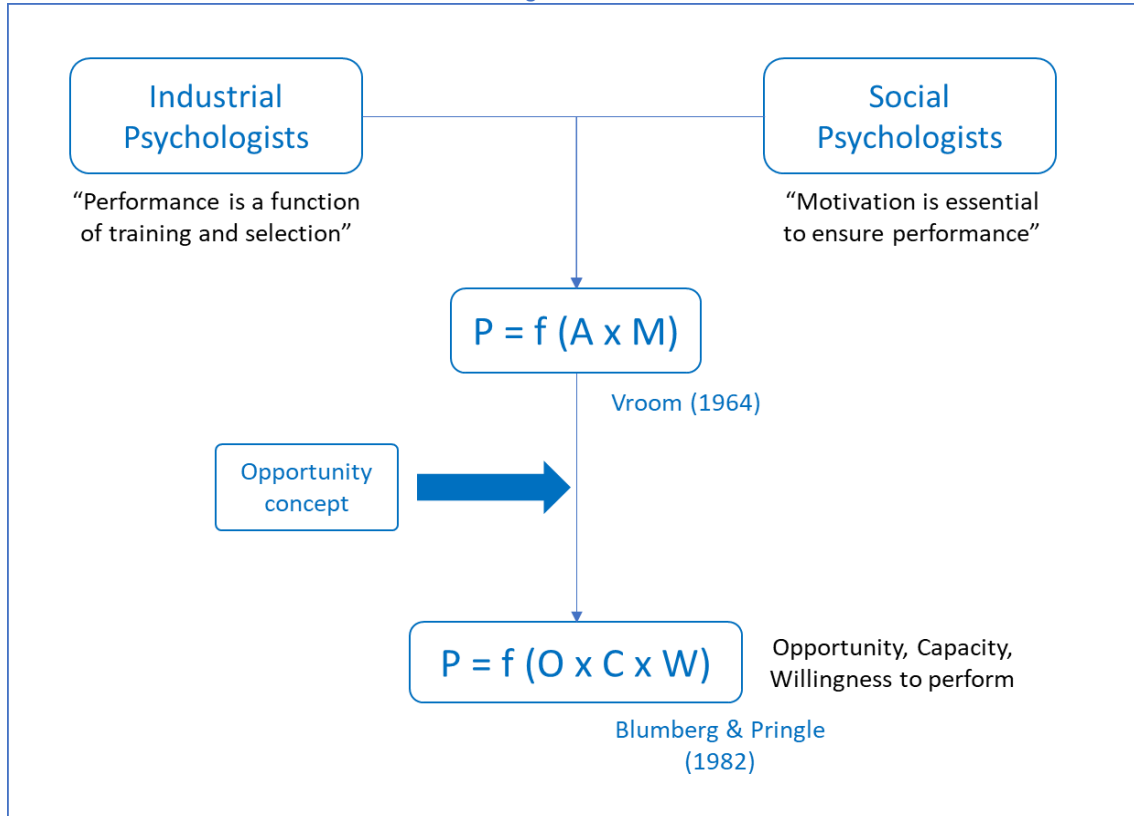
Fuente: elaboración propia

## 2. Resultados en base a los objetivos de investigación

### 2.1 Determinar los orígenes del modelo AMO y su planteamiento inicial

El origen del modelo se remonta a los planteamientos teóricos de la psicología industrial y social, que defendían que el rendimiento individual estaba relacionado con las capacidades o la voluntad de los empleados, o con la interacción de ambas (MacInnis & Jaworski, 1989; Vroom, 1964). Estos planteamientos se centraban únicamente en características personales del trabajador, hasta que unos años más tarde se consideró que aspectos como las condiciones y procedimientos de trabajo, o el estilo de liderazgo de los responsables debían formar parte de la ecuación (Blumberg & Pringle, 1982). Sobre estas bases se plantea posteriormente el modelo AMO. El gráfico 8 muestra la evolución del proceso descrito.

Gráfico 8: Orígenes del modelo AMO

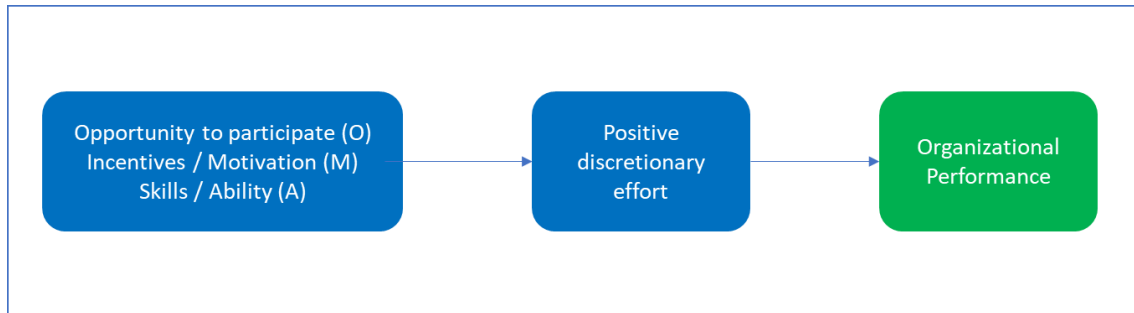


Fuente: elaboración propia

El modelo AMO se basa en la proposición inicial de Bailey (1993), que sugiere que para que los empleados estén dispuestos a ofrecer un rendimiento superior al de sus obligaciones contractuales es necesario que tengan las habilidades necesarias y la suficiente motivación, y que las organizaciones ofrezcan las oportunidades adecuadas para participar (Boselie, 2010; Boxall & Purcell, 2003; Marín-García, Miralles, et al., 2011). En base a esta proposición, el modelo se desarrolla para examinar los efectos de los sistemas de alto rendimiento en el rendimiento de los empleados de tres tipos de industrias de fabricación: metalurgia, textil e instrumental médico (Appelbaum et al., 2000). Los autores diseñaron un estudio longitudinal y multinivel en el que recogieron datos relativos a trabajadores, responsables y rendimiento de la planta productiva. En este estudio se utilizaron variables y escalas de medida específicas para cada una de las tres categorías del modelo, mientras que las medidas de rendimiento se adaptaron en función de la industria estudiada: la tasa de producción en la industria metalúrgica; la calidad del producto o utilización del espacio en la industria textil; o el valor agregado, inventario de productos en curso o productividad en la industrial de instrumental médico. Asimismo, evaluaron el efecto de los sistemas de alto rendimiento a nivel individual: el grado de confianza de los empleados con sus responsables, las percepciones sobre el puesto de trabajo, el compromiso con la organización, la satisfacción en el trabajo o el nivel de estrés. Tras el estudio, los autores concluyeron que un sistema de alto rendimiento efectivo requiere tres componentes esenciales: la oportunidad de participar, los incentivos apropiados, y políticas para desarrollar las capacidades y competencias de los empleados (Appelbaum et al., 2000). Dichos

componentes conforman el modelo AMO, que persigue potenciar el rendimiento de los empleados para posteriormente influir positivamente en el rendimiento de la organización, como muestra el gráfico 9. A partir de la investigación inicial, el modelo se extiende en la literatura de RRHH y muchos de los artículos publicados a partir de entonces lo utilizan en su marco teórico de manera implícita o explícita (Boselie et al., 2005; Ehrnrooth & Björkman, 2012; Hutchinson, 2013; Paauwe & Boselie, 2005)

Gráfico 9: El modelo AMO del rendimiento



Fuente: adaptado de Appelbaum et al. (2000)

Del planteamiento original del modelo se deducen dos aspectos importantes. En primer lugar, los sistemas de alto rendimiento afectan primeramente a los empleados, que posteriormente influyen en el rendimiento de la organización. Esta afirmación está en línea con algunos autores que sostienen que no existe una relación directa entre los sistemas y el rendimiento de las organizaciones (M. Armstrong & Stephen, 2014; D. Guest, 1997), ya que los resultados a nivel individual ejercen de mediadores en esta relación (Boselie, 2010; Boxall & Macky, 2009). De este modo, las prácticas de RRHH afectan en primer lugar al comportamiento, actitudes o satisfacción de los empleados, que a su vez influyen en los resultados operacionales y financieros (D. Guest, 1997; Jiang, Lepak, Hu, et al., 2012; Katou, 2017; Vermeeren, 2017). Si los empleados ejercen de mediador, la gestión eficaz de recursos humanos debe colocar al individuo en el centro de interés, desarrollando prácticas y sistemas capaces de mejorar las habilidades, motivación y oportunidades de los empleados. Asimismo, es necesario tener en cuenta las percepciones del empleado, ya que preceden a su comportamiento (Nishii et al., 2008) y determinan los niveles de satisfacción en el trabajo (Boon et al., 2014; Latorre et al., 2016). Quizás por este motivo, en los últimos años muchas investigaciones han puesto el foco sobre cómo las prácticas son comunicadas y percibidas, y no tanto sobre el contenido de los sistemas (Katou, 2017; Latorre et al., 2016).

El segundo aspecto que subyace en el planteamiento original es que las tres categorías deben estar presentes para que el modelo sea efectivo. Por este motivo, es importante determinar qué modelos de interacción se han considerado en la literatura, lo cual constituye otra de nuestras preguntas de investigación.

## 2.2 Recopilar resultados y conclusiones de estudios previos en relación con el modelo AMO

En la revisión sistemática de literatura del primer artículo observamos que, aunque la incidencia del modelo AMO en la literatura de RRHH era muy considerable, existían pocos estudios con el objetivo específico de verificar el modelo tal y como había sido propuesto. Es decir, apenas encontramos investigaciones que replicaran y validaran el modelo en contextos diferentes, pero utilizando las mismas variables en las tres categorías, midiendo el rendimiento de la misma forma, y llevando a cabo un estudio longitudinal como el planteado en la investigación original para establecer relaciones de causalidad. Sin embargo, observamos que el modelo había evolucionado y se utilizaban enfoques y metodologías diferentes en función de cada estudio. En este sentido, hallamos artículos que evaluaban el modelo de manera indirecta, utilizando las categorías propuestas para clasificar las prácticas de alta implicación y realizando análisis estadísticos para determinar la influencia de dichas prácticas en resultados que variaban en función del estudio planteado. Asimismo, otros estudios consideraban el modelo únicamente a nivel teórico, y aunque proporcionaban información relevante para construir el discurso teórico y encontrar nuevas fuentes de información, no extraían ninguna conclusión de su funcionamiento empírico. Nuestros resultados apuntan por tanto a que la literatura de RRHH asume que el modelo proporciona una estructura adecuada para investigar la relación entre los sistemas de alta implicación y el rendimiento, pero no existe un consenso claro a la hora de establecer conclusiones sólidas acerca de su funcionamiento preciso.

En la primera revisión, la mayor parte de las investigaciones empíricas estaban basadas en estudios transversales que recogen y analizan los datos de una muestra poblacional en un momento puntual. Aunque estos estudios son útiles para determinar el efecto de los sistemas de alta implicación sobre el rendimiento, algunos autores sostienen que no son capaces de establecer relaciones causales acerca de cómo afecta la introducción de sistemas de alta implicación al cabo de un determinado período de tiempo (Knies & Leisink, 2014; Marin-Garcia et al., 2020; Shih et al., 2007). Para evaluar la efectividad de los sistemas tras su implantación es interesante utilizar estudios longitudinales, que recogen datos de la misma muestra repetidamente a lo largo de un periodo de tiempo (Benet-Zepf et al., 2018; Van De Voorde et al., 2012). En nuestra revisión únicamente encontramos seis artículos que realizaban total o parcialmente un estudio longitudinal, lo cual puede deberse a que este tipo de estudios son más costosos, porque implican un diseño temporal dilatado en el tiempo, así como repetir las mediciones con los mismos individuos y las mismas circunstancias (Alagaraja, 2012). Este hallazgo está en línea con algunos autores, que plantean la necesidad de aumentar los estudios longitudinales para establecer conclusiones más sólidas en la relación entre la gestión de RRHH y los resultados (Marin-Garcia et al., 2020; Subramony, 2009; Turner & Pennington, 2015).

Otro aspecto relevante que detectamos es la falta de consenso acerca del enfoque metodológico óptimo (Harney & Jordan, 2008). A pesar de las demandas de algunos autores acerca de la necesidad de sistematizar el uso de sistemas más específicos (Lepak

et al., 2006), hallamos una gran variedad de contextos, combinaciones de prácticas, escalas para medir los sistemas, enfoques del concepto de rendimiento, variables de control utilizadas y análisis estadísticos para procesar los datos y extraer conclusiones. De esta manera, aunque muchos estudios confirman los efectos positivos de los sistemas de alta implicación (Appelbaum et al., 2000; Huselid, 1995; Iddekinge et al., 2018; Kaufman, 2015; Obeidat et al., 2010), es complicado establecer conclusiones firmes al respecto. Si bien la gran variedad de estudios en diferentes ámbitos enriquece el conocimiento sobre el modelo, es difícil generalizar la validez de un estudio si no existe una réplica similar, ya que datos diferentes producen resultados diferentes (Alagaraja, 2012; Boon et al., 2019).

Descubrimos asimismo que el modelo AMO era dinámico, y evolucionaba a lo largo de las investigaciones, que planteaban constantemente el estudio de nuevos factores. Algunos autores consideran que no es sencillo evaluar la influencia del modelo sobre los resultados, porque no depende únicamente del conjunto de prácticas utilizado, sino también de la estrategia de la organización, de los factores contextuales, de las características y percepciones de los empleados, de las habilidades y motivaciones de los responsables para poner en marcha los sistemas, o de las relaciones interpersonales, entre otros (Bos-Nehles et al., 2013; Boxall & Macky, 2009; Ehrnrooth & Björkman, 2012; Jiang, Lepak, Hu, et al., 2012; Vermeeren, 2010; Wright & Nishii, 2007).

La ventaja de utilizar un protocolo de revisión sistemática es que cinco años después podemos replicarlo para observar la evolución de nuestras conclusiones iniciales. Como hemos indicado en la introducción, en el **anexo A** se muestra información detallada de los artículos seleccionados en la primera revisión. Del mismo modo, en el **anexo B** se detallan los aspectos relevantes de los artículos seleccionados a partir del año 2016. La primera conclusión de la segunda revisión bibliográfica es que el número de estudios ha aumentado de manera considerable. El rango de búsqueda de la primera revisión abarca más de 20 años (1993-2016), mientras que en la última únicamente se consideran artículos publicados desde el año 2016 hasta la actualidad. Sin embargo, utilizando los mismos términos de búsqueda obtenemos en todas las bases de datos un mayor número de resultados, lo que indica que el interés por la relación entre la gestión de RRHH y el rendimiento no se ha reducido. Mientras que en *Scopus* y *Web of Science* el incremento es de más del 40% y 25% respectivamente, en *Google Scholar* los resultados se triplican. Observamos asimismo que el rango de países donde se publican estudios varía considerablemente, aumentando especialmente la presencia de países asiáticos como los países árabes, Pakistán, India, China o países del sudeste asiático. Este hecho indica que los efectos de la globalización también se muestran en el ámbito científico, y cada vez más países se suman a la producción científica. De hecho, encontramos menos estudios de países anglosajones o de la Unión Europea, quizás porque tras muchas publicaciones el foco de interés se ha movido hacia otros temas.

De los nuevos resultados se desprende que existe un aumento de investigaciones que evalúan el modelo AMO de manera empírica. Nuevamente, aunque existen resultados dispares, muchos de ellos confirman los efectos positivos de los sistemas de alta

implicación (Andreeva & Sergeeva, 2016; Bello-Pintado & Garcés-Galdeano, 2019; Chung & Pak, 2021; Collins & Kehoe, 2017; Dastmalchian et al., 2020; Hafeez et al., 2020; Hosseingholizadeh et al., 2016; Jyoti & Rani, 2017; Katou, 2017; Kengatharan, 2020; Kloutsiniotis & Mihail, 2017; Kundu & Gahlawat, 2018; Latorre et al., 2016; Miao et al., 2021; Morales-Sánchez & Pasamar, 2019; Muisyo, Qin, Ho, Julius, et al., 2021; Obeidat, 2017; Ollo-López et al., 2016; Rizvi & Garg, 2021; Salas-Vallina et al., 2021; S. J. Shin et al., 2016; Siddique et al., 2019; Song et al., 2020; Tensay & Singh, 2020). Por otro lado, existen algunas novedades en los enfoques y objetivos de investigación, como por ejemplo la inclusión del concepto de prácticas de RRHH verdes, que son aquellas que estimulan el comportamiento de los empleados para crear organizaciones socialmente responsables, eficientes y sensibles a la problemática medioambiental (Muisyo, Qin, Ho, Julius, et al., 2021; Pham et al., 2020; Rayner & Morgan, 2018; Rizvi & Garg, 2021; Singh et al., 2020). Asimismo, algunos estudios introducen métodos de análisis estadísticos novedosos respecto a la revisión anterior, como el uso de regresiones de mínimos cuadrados parciales (PLS) (Edgar et al., 2020; Guerci et al., 2017; Hassan et al., 2020; Hosseingholizadeh et al., 2016; Jyoti & Rani, 2017; Obeidat, 2017; Pham et al., 2020; Rincon-Roldan & Lopez-Cabrales, 2021), análisis clúster (Díaz-Fernández et al., 2020), análisis cualitativos comparativos de conjuntos difusos (fsQCA) (Meuer, 2017; Schouteten et al., 2021), análisis de condiciones necesarias (NCA) (Hauff et al., 2021; Tuuli & van Rhee, 2021), o modelos lineales jerarquizados (HLM) (Chung & Pak, 2021; Miao et al., 2021; Tuuli & van Rhee, 2021).

Sin embargo, algunas de las limitaciones observadas en la primera revisión siguen presentes. En primer lugar, sigue existiendo una gran variedad de prácticas, medidas de rendimiento, mecanismos de control, factores contextuales y enfoques metodológicos a lo largo de los estudios. Nuestros resultados son acordes a los de otros autores, que argumentan que la variabilidad de los estudios en los últimos años, en contra de lo deseable, se ha incrementado, y que muchos estudios utilizan o adaptan escalas para medir los sistemas de RRHH que no han sido extensivamente validadas (Boon et al., 2019). Por otro lado, la mayoría de los estudios empíricos utilizan un enfoque transversal y hay escasez de estudios longitudinales. Entre los artículos seleccionados únicamente hay una investigación longitudinal que utiliza dos series de datos para evaluar el efecto causal de la gestión de recursos humanos en la productividad (Garmendia et al., 2021). Finalmente, la mayor parte de los estudios utilizan un enfoque aditivo, en línea con revisiones anteriores donde se indican que cerca del 90% de los estudios utilizan índices sumativos que no permiten evaluar las interacciones y sinergias que cimentan la efectividad de los sistemas de RRHH (Boon et al., 2019). Estas limitaciones se reflejan en las demandas de los estudios en la sección de investigación futura, y que hemos resumido en la columna "*future research*" del **anexo B**. Muchos estudios apuntan a la necesidad de llevar a cabo más estudios longitudinales para establecer relaciones de causalidad; la conveniencia de replicar las investigaciones en otros ámbitos y contextos para generalizar los resultados; o la posibilidad de explorar distintos mediadores y moderadores, otras variables dependientes, métodos cualitativos, o análisis a distintos niveles de la organización para ampliar el conocimiento sobre el ámbito de los RRHH.



### 2.3 Determinar qué prácticas de alta implicación incluyen las tres categorías propuestas por el modelo AMO

Observamos que existe un amplio rango de prácticas de RRHH dependiendo de cuestionarios empleados, los datos disponibles, y las necesidades u objetivos de cada estudio. Nuestros resultados son acordes a otras revisiones de literatura, en las que se indica que existe una gran variación respecto al número de prácticas incluidas en las diferentes investigaciones y grandes diferencias en la conceptualización de los sistemas de RRHH (Boon et al., 2019). Por lo tanto, resulta complicado conocer qué conjunto de prácticas es el que mejor funciona para explorar la relación entre los sistemas de alta implicación y el rendimiento.

Es importante resaltar que conviven dos puntos de vista: la perspectiva universal, que sostiene la existencia de combinaciones de prácticas óptimas que son efectivas en cualquier organización; y la perspectiva contextual, que considera que los sistemas de recursos humanos deben adaptarse a las circunstancias particulares de cada organización (Delery, 1998; Delery & Doty, 1996; Dewar & Werbel, 1979; Huselid, 1995; Schimansky, 2014). En otros aspectos sí existe consenso entre los académicos. En primer lugar, está comúnmente aceptado integrar las prácticas en sistemas para aprovechar las sinergias y obtener un resultado mejor que la suma de los efectos individuales de cada práctica (Appelbaum et al., 2000; Bayo-Moriones & Bello-Pindado, 2021). En esta línea, muchos autores apuntan a la conveniencia de conceptualizar los sistemas de recursos humanos de acuerdo con las categorías del modelo AMO (Jiang, Lepak, Hu, et al., 2012; Lepak et al., 2006), que agrupan las prácticas en función del objetivo compartido: desarrollar las habilidades y las competencias; incrementar la motivación intrínseca y extrínseca; ofrecer oportunidades de participación (Beltrán-Martín & Bou-Llugar, 2018). Esta clasificación representa una guía teórica que ofrece un marco estructurado para facilitar la comprensión de las relaciones complejas de la gestión de recursos humanos (Beltrán-Martín & Bou-Llugar, 2018). Sin embargo, los límites de cada categoría son difusos y se solapan con frecuencia. A modo de ejemplo, la motivación puede incrementarse a través de incentivos económicos basados en el rendimiento, que habitualmente se clasifican en la categoría de motivación; pero también es posible hacerlo mediante la posibilidad de participar en el proceso de decisión, que comúnmente se clasifica en la categoría de oportunidades. Esta realidad podría ayudar a entender por qué los enfoques de interacción sumativos demuestran también efectos positivos, incluso cuando utilizan únicamente prácticas de una o dos categorías del modelo AMO. En segundo lugar, pese a su gran variabilidad, hay prácticas que son consideradas repetidamente (Perello-Marin & Ribes-Giner, 2014). Numerosos estudios consideran que existe un grupo central de prácticas, que representan los principales objetivos de la gestión estratégica de recursos humanos (Batt, 2002): procedimientos de selección y contratación de personal; programas de formación y desarrollo; sistemas de incentivos; y métodos de evaluación del rendimiento (Boselie et al., 2005). Algunos autores añaden además las iniciativas destinadas a fomentar la participación y asegurar un flujo transparente de información (Marín-García & Conci, 2013; Shih et al., 2007; Siddique et al., 2019; Tensay & Singh, 2020).

De acuerdo con nuestros resultados, la mayoría de los estudios consideran que las prácticas para fomentar las habilidades son principalmente la formación en el puesto de trabajo para desarrollar nuevas competencias o mejorar las existentes, y los procesos de selección de personal para atraer empleados que se adapten a la organización. En la categoría de la motivación, las prácticas más utilizadas en los estudios están vinculadas a la motivación extrínseca, especialmente los incentivos económicos por rendimiento individual o en grupo, o la evaluación del rendimiento. El resto de las prácticas asociadas a la motivación extrínseca y no basadas en recompensas económicas, como la promoción interna, la conciliación, las actividades organizadas por la empresa para promover las interrelaciones, o el reconocimiento formal, son menos utilizadas. Asimismo, es poco frecuente considerar prácticas asociadas a la motivación intrínseca, quizás porque se basan en percepciones subjetivas del empleado y es complicado medirlas. Finalmente, las prácticas asociadas a la oportunidad varían considerablemente en función de cada estudio, y es difícil determinar cuáles son las más utilizadas. Sin embargo, se pueden agruparse en cuatro categorías principales: metodologías de trabajo para involucrar al empleado en la toma de decisiones; estrategias para fomentar el intercambio de conocimiento e información, procedimientos para diseñar de manera efectiva el puesto de trabajo; acciones para dotar de autonomía y flexibilidad a los empleados. Nuestros resultados son consistentes con otras revisiones, que afirman que las prácticas más utilizadas son la formación, la participación, los incentivos, la evaluación del rendimiento, la selección y el diseño de los puestos de trabajo (Boon et al., 2019; Boselie et al., 2005; Posthuma et al., 2013). En los **anexos A y B** se reflejan las prácticas incluidas en cada uno de los estudios seleccionados en cada una de las revisiones de literatura. Siempre que los datos de las investigaciones lo permiten, hemos segregado las prácticas de acuerdo con las tres categorías del modelo AMO.

En el cuarto artículo de la tesis, en el que investigamos la relación entre las prácticas de alta implicación y la satisfacción en el trabajo, hemos analizado el efecto de cuatro prácticas de RRHH, en línea con estudios anteriores (Appelbaum et al., 2000; Combs et al., 2006; Ho & Kuvaas, 2020; Ramsay et al., 2000). En la tabla 9 se observan dichas prácticas, clasificadas en función de las tres categorías del modelo. Asimismo, se indican los ítems del cuestionario PIAAC relativos a cada una de ellas.

Tabla 9: HRM practices, PIAAC items & AMO model

HRM practices	PIAAC item	Skills bundle	Motivation bundle	Opportunity bundle
Job autonomy	F_Q03a; F_Q03c			X
Staff training	D_Q13a; D_Q13b; D_Q13c	X		
Self-determination learning style	I_Q04b; I_Q04d; I_Q04h I_Q04j; I_Q04l; I_Q04m		X	
Participatory decision-making	D_Q11a; D_Q11b; D_Q11c			X

Fuente: elaboración propia

## 2.4 Identificar distintas medidas de rendimiento utilizadas para determinar la validez del modelo

Existe un amplio abanico de formas de entender el significado de rendimiento. Es complicado afirmar cuál de ellas tiene mayor prevalencia en la literatura porque en función de los objetivos de la investigación se utilizan unas u otras, o incluso distintas combinaciones. Algunos autores sostienen que el término “rendimiento” es difuso y puede ser concebido de distintas formas (An, 2009), y además no existe un criterio único para evaluar la efectividad de los sistemas de alta implicación (Bos-Nehles et al., 2013). Por este motivo, muchos autores indican que el término “resultado” refleja mejor el amplio rango de variables dependientes utilizadas en la literatura de recursos humanos para explicar el cumplimiento de logro de los objetivos propuestos (Boselie et al., 2005; D. Guest, 1997). De acuerdo con nuestra investigación, y en línea con estudios anteriores (Dyer & Reeves, 1995; Huselid, 1995), los resultados pueden agruparse en tres grupos: individuales, operacionales y financieros. En nuestra primera revisión de literatura algunos de los estudios apuntaban a que la mayoría de las investigaciones se centraban en resultados a nivel organizacional, y que pocos de ellos prestaban atención a los resultados individuales (Boselie, 2010; D. E. Guest, 1999; Jiang, Lepak, Han, et al., 2012). Sin embargo, en la revisión de literatura realizada en el último artículo, muchos estudios se focalizan en los efectos a nivel individual. Más aún, algunos autores sostienen que el interés está cambiando del contenido de las prácticas a la manera en que son percibidas y comunicadas a los empleados (Katou, 2017; Latorre et al., 2016).

A lo largo de la tesis hemos encontrado estudios que demuestran una relación positiva entre la utilización de sistemas de alta implicación y resultados financieros (Dastmalchian et al., 2020; D. Guest et al., 2003; Obeidat, 2017; Shih et al., 2007). La razón esgrimida es que es conveniente utilizar estos resultados porque son los mejores indicadores del éxito de la organización (Boselie et al., 2005). De acuerdo con nuestro estudio, los resultados financieros incluyen por ejemplo índices de rentabilidad, ratios de beneficios sobre la inversión o sobre las ventas o cuota de participación en el mercado (Alagaraja, 2012; Jiang, Lepak, Han, et al., 2012). Otras investigaciones muestran una relación positiva entre los sistemas y resultados operacionales: eficiencia de la fabricación (Bello-Pintado, 2015); cumplimiento de los objetivos de equipo (Demortier et al., 2014; Hafeez et al., 2020); cumplimiento de objetivos individuales (Boon et al., 2011; Guthrie, 2001; Mira et al., 2019); eficiencia medioambiental (Rizvi & Garg, 2021; Singh et al., 2020). En ocasiones es difícil estandarizar las medidas de productividad, eficiencia o calidad en el producto o servicio, puesto que son diferentes en función de cada caso (Boselie et al., 2005).

Otros estudios apuntan a que los sistemas de RRHH afectan en primer lugar a los resultados individuales, y estos a su vez a los resultados operacionales o financieros (D. Guest, 1997; Jiang, Lepak, Hu, et al., 2012; Katou, 2017; Vermeeren, 2017). Es decir, los resultados individuales actúan como mediadores entre los sistemas y el rendimiento organizacional (Boselie, 2010; Boxall & Macky, 2009; Lepak et al., 2006). Esta proposición está en línea con la teoría del intercambio social (SET, por sus siglas en

inglés) (Blau, 1964) o la teoría de las capacidades dinámicas (RBV, por sus siglas en inglés (Mahoney & Pandian, 1992; Wernerfelt, 1984), que sugieren que las prácticas de RRHH afectan en primer lugar a las percepciones, actitudes y rendimiento de los empleados (resultados cercanos), y éstas posteriormente a los resultados operacionales o financieros de la organización (resultados distantes). Asimismo, hay autores que apuntan a que es conveniente utilizar indicadores individuales para fomentar el compromiso de los empleados (Boselie et al., 2005; Claudia, 2015; D. Guest, 1997), mientras que otros afirman que si los empleados toman decisiones sobre su propio trabajo, entonces es conveniente medir los efectos de las políticas y prácticas de RRHH sobre ellos (Drummond & Stone, 2007). Nuestros resultados reflejan que existen estudios que demuestran una relación positiva entre los sistemas de recursos humanos e indicadores individuales. Algunos de ellos son positivos, como la satisfacción en el trabajo (Kloutsiniotis & Mihail, 2017; Latorre et al., 2016; Miao et al., 2021; Ollo-López et al., 2016; Vermeeren, 2017), el nivel de compromiso del empleado hacia sus tareas (Malik & Lenka, 2019; Tensay & Singh, 2020), o el compromiso hacia la organización (Edgar et al., 2020; Morales-Sánchez & Pasamar, 2019; Muisyo, Qin, Ho, & Julius, 2021; Salas-Vallina et al., 2021). Otros son negativos, como el deseo de abandonar la organización o el absentismo (Arthur, 1994; Kehoe & Wright, 2013). Es importante precisar que los resultados individuales dependen en gran medida de las percepciones de los empleados. Algunos estudios distinguen entre las medidas diseñadas por los responsables de RRHH y las percibidas, ya que estas últimas determinan en gran medida la satisfacción y el rendimiento de los empleados (Boon et al., 2014; Latorre et al., 2016). Por tanto, es conveniente fomentar un clima de colaboración que estimule la respuesta positiva de los empleados (Al Doghan et al., 2019), y para ello debe garantizarse que las prácticas son consistentes con la estrategia de la organización y los empleados perciben que son adecuadas para lograr sus objetivos personales y organizacionales (Ehrnrooth & Björkman, 2012).

En línea con los autores que se centran en las percepciones y resultados a nivel individual, en el cuarto artículo de la tesis hemos investigado la relación entre los sistemas de alta implicación y la satisfacción en el trabajo, como posible variable mediadora en la relación entre la gestión de recursos humanos y el rendimiento organizacional. La satisfacción en el trabajo se refiere a la autopercepción que tienen los empleados acerca de su trabajo o de aspectos concretos de éste (Spector, 1997; Tett & Meyer, 1993; Vroom, 1964). Los efectos de la satisfacción en el trabajo han sido considerados en numerosos estudios. Algunos autores se centran en los efectos individuales positivos, como el nivel de compromiso de los empleados hacia la organización o sus tareas, la disposición a cooperar, o el sentido de pertenencia; o negativos, como el absentismo, el estrés o el deseo de abandonar la organización (Aziri, 2011; Fabi et al., 2015; Katou, 2017; Latorre et al., 2016). Otros estudios ponen el foco en los efectos a nivel organizacional, aunque la relación entre la satisfacción en el trabajo y el rendimiento es compleja y hasta la fecha no existe un consenso claro (Al Doghan et al., 2019; Judge et al., 2001; Landy, 1989).

## 2.5 Evaluar los factores que afectan a la utilización y el rendimiento de los sistemas de alta implicación

En el marco del modelo AMO, Numerosos estudios utilizan factores contextuales como variables de control en sus análisis estadísticos. Como en los casos anteriores, observamos una gran variabilidad de controles tanto a nivel organizacional (tamaño de la empresa, actividad económica, sector, tipo de empresa, competidores, país), como variables de control individuales (edad, sexo, antigüedad, tipo de contrato, nivel educativo, puesto de responsabilidad). En el **anexo A** se observan las prácticas, medidas de rendimiento y variables de control de los artículos seleccionados en la revisión sistemática del primer artículo. En el **anexo B** se presenta la misma información, pero relativa a la revisión bibliográfica realizada cinco años después, y considerando únicamente los artículos publicados a partir del año de publicación de nuestra primera revisión. Pese a la necesidad de estandarizar los análisis planteada repetidamente por algunos autores (Boon et al., 2019), observamos que sigue existiendo un gran rango de enfoques y variables.

En el segundo y tercer artículo de la tesis evaluamos la prevalencia y el grado de uso de los programas de remuneración económica en el entorno laboral español. En la revisión de los estudios previos relacionados con nuestra investigación no encontramos ninguno que estudiara específicamente cuáles son los factores que afectan a la implementación de los programas de remuneración. Sin embargo, observamos que muchas investigaciones identifican variables de ajuste susceptibles de afectar a la distribución salarial global en España (Felgueroso et al., 2008; Ramos et al., 2014)). Decidimos seleccionar las variables de ajuste en base a éstas últimas, con el objetivo de determinar si alguna de ellas afecta a la estructura salarial del mismo modo en que lo hace a la distribución salarial.

Con respecto a los factores organizacionales, algunas investigaciones concluyen que existen diferencias salariales relacionadas con la competitividad del sector (Casado Díaz & Simón, 2016; Clemente et al., 2012), o entre compañías públicas o privadas (Arranz Muñoz & García Serrano, 2014; Ramos et al., 2014). En relación con el impacto de los convenios colectivos no existe un consenso claro; mientras unos estudios indican que la negociación colectiva proporciona estabilidad y equidad a los salarios en España (Felgueroso et al., 2008; Simón, 2009), otros apuntan a que la estructura rígida, fomentada por los convenios colectivos, se traduce en reducciones salariales, desempleo y falta de flexibilidad a la hora de introducir medidas de mejora (Bande & Fernández, 2011; Elisabet et al., 2007; Peraita, 2005). Por otro lado, hallamos estudios que argumentan que las diferencias salariales podrían deberse a factores personales. Algunas investigaciones demuestran diferencias de género (Simon et al., 2017; Simón & Murillo, 2014), o tratan el fenómeno del techo de cristal en los salarios más altos (Antón & de Bustillo, 2015; Felgueroso et al., 2008). Otras investigaciones consideran el nivel educativo, concluyendo que no es garantía de mejores salarios (Budría & Moro-Egido, 2008), especialmente en trabajos donde existe el fenómeno de la sobre cualificación (Budría & Moro-Egido, 2008). Por el contrario, en puestos de trabajo de mayor responsabilidad o que requieren más conocimientos, el nivel educativo sí está

relacionado con salarios más elevados (Arranz Muñoz & García Serrano, 2014). Otros estudios argumentan que la antigüedad afecta de manera positiva a los salarios porque está relacionada con la experiencia o simplemente los derechos adquiridos (Alcalá Agulló & Hernández Martínez, 2006; Elisabet et al., 2007). Del mismo modo, los trabajos a tiempo parcial sufren discriminación salarial (Simon et al., 2017). Finalmente, hay investigaciones que señalan la existencia de incentivos asociados a los puestos directivos (Grau-Grau & Parry, 2010).

Tras revisar los resultados y los argumentos esgrimidos en la literatura, decidimos considerar en nuestro estudio los siguientes factores: Clasificación Nacional de Ocupaciones (CNO), Clasificación Nacional de Actividades Económicas (CNAE), negociación colectiva, género, nivel educativo, tipo de contrato, puesto de responsabilidad, antigüedad, e ingresos brutos por el mes de referencia. Los resultados de nuestro artículo revelan que la incidencia y la intensidad de los programas de remuneración variable en España es baja, por lo que esta forma de motivación extrínseca no parece ser muy frecuente en el mercado laboral español. Sin embargo, hay algunos aspectos con relación a los factores de ajuste estudiados que merecen ser considerados. En primer lugar, observamos que en las tres series de datos analizadas la intensidad y la incidencia de los programas de remuneración variable es ligeramente mayor en los hombres que en las mujeres, aunque esta diferencia se ha reducido con el paso del tiempo, quizás relacionada con las políticas de igualdad desarrolladas los últimos años. Sin embargo, en términos de retribuciones, estas diferencias no son muy relevantes. En segundo lugar, la intensidad de dichos programas tiende a ser mayor en cargos de responsabilidad, aunque algunos estudios señalan que las primas por supervisión (generalmente asociadas a mandos intermedios) son un concepto retributivo fijo, que varía en función del contexto (Leonida et al., 2020). El tipo de contrato no es relevante en términos de retribuciones, aunque la intensidad es siempre un poco mayor en contratos fijos con respecto a los temporales, lo que refuerza la idea de que la rigidez del mercado laboral español afecta en mayor medida a los trabajadores temporales (Sanromá i Meléndez, 2012). En tercer lugar, observamos que un nivel alto de estudios no se corresponde con una intensidad mayor de complementos salariales, como sucede con la ocupación. En nuestro análisis, hemos considerado la Clasificación Nacional de Ocupaciones (CNO), que está fuertemente asociada con el nivel de educación, por lo que no es sorprendente que ambos factores se comporten de manera similar. Una vez más, constatamos que la rigidez del contexto español inhibe los programas de remuneración, aunque el nivel de educación sí parece estar relacionado con la estabilidad en el trabajo (Sanromá i Meléndez, 2012). En cuarto lugar, la intensidad y la incidencia de suplementos salariales es mayor en empresas reguladas por convenios de empresa que en las que lo están por convenios regionales o nacionales, lo cual es lógico porque ningún convenio puede presentar desventajas con los mínimos establecidos por ley. Algunos estudios sostienen que la descentralización de los convenios reduce la rigidez salarial (Martínez Matute, 2016; Messina et al., 2010). Este hecho supone un buen ejemplo de cómo la gestión de recursos humanos puede afectar de manera positiva a las condiciones de trabajo. En quinto lugar, hay algunas actividades

económicas (CNAE) susceptibles de afectar al uso de los programas de remuneración variable. Las diferencias más significativas se observan en la administración pública y defensa, lo cual tiene sentido porque la estructura salarial de los empleados públicos contiene diversos suplementos, aunque sería interesante determinar en futuros estudios si dichos complementos se basan en el rendimiento o si, por el contrario, son en realidad fijos e iguales para todos. Nuestros resultados son consistentes con estudios que demuestran la existencia de primas salariales asociadas al sector público (Antón & de Bustillo, 2015; Hospido & Moral-Benito, 2016; Ramos et al., 2014). Otras actividades como educación, sanidad, construcción y transporte también afectan a la intensidad de uso de los programas de remuneración, pero en menor medida. Finalmente, tanto la antigüedad y el salario bruto afectan de manera positiva a la existencia de los programas económicos, que representan un porcentaje mayor del salario en trabajadores con más tiempo de servicio y mayor salario. Nuestros resultados son consistentes con estudios previos que señalan la existencia de mayores primas salariales en salarios más elevados (Card & De La Rica, 2006). Del mismo modo, otros autores sostienen que la remuneración de los altos ejecutivos está dominada por suplementos variables, por lo que la intensidad de dichos complementos es mayor en empleos mejor pagados (Greckhamer, 2016; Leonida et al., 2020).

En el cuarto artículo evaluamos la influencia de los sistemas de RRHH en la satisfacción en el trabajo. Algunos factores son susceptibles de afectar la satisfacción en el trabajo. A nivel individual la literatura ha contemplado, entre otros, las percepciones del empleado, los rasgos de personalidad, la edad o la antigüedad en el puesto de trabajo (Al Doghan et al., 2019; Aziri, 2011; Digman, 1990; Goldberg, 1993). Con relación al puesto de trabajo, factores como la autonomía, la variedad de tareas, las posibilidades de desarrollo y aprendizaje, las condiciones psicosociales, las relaciones interpersonales, o el trabajo en equipo son susceptible de moderar el nivel de satisfacción (Christen et al., 2006; Grawitch et al., 2009; Herzberg, 1974). Finalmente, a nivel organizacional, factores como las políticas y la cultura de la compañía, las posibilidades de promoción o el sistema de incentivos también tienen un efecto importante sobre la satisfacción (Heffernan & Dundon, 2016; Herzberg, 1974; Locke & Latham, 1990). Las prácticas y sistemas de RRHH se enmarcan en este último grupo, y algunos estudios han hallado relación positiva entre éstos y la satisfacción en trabajo (Gould-Williams, 2003; Mira et al., 2019). En nuestro caso, hemos utilizado en los análisis prácticas relativas a las tres categorías del modelo AMO: aprendizaje en el puesto de trabajo como habilidades; motivación intrínseca para aprender en la categoría de motivación; y la participación en los procesos de decisión y la autonomía como oportunidades. Además, hemos seleccionado la edad, el tamaño de la empresa y el sector como variables de control; y la presencia o no de tareas complejas, junto con los puestos de responsabilidad, como variables moderadoras. Los resultados del estudio no muestran efectos relevantes de las variables seleccionadas para predecir la variación de la satisfacción en el trabajo, quizás porque dicha satisfacción depende de muchos otros factores. Sin embargo, en línea con algunos estudios (Beltrán-Martín & Bou-Llugar, 2018; Guerci et al., 2017; Pham et al., 2020; Vermeeren, 2017), los análisis revelan una mayor influencia de las

habilidades, seguida de las oportunidades. La motivación apenas tiene capacidad predictiva, aunque interactúa con las otras categorías para aumentar los efectos positivos en modelos interactivos. Por otro lado, los resultados mejoran en el caso de empleados con puestos de responsabilidad, de acuerdo con algunos estudios que indican que dichos puestos exigen conocimientos y aptitudes más amplios (Bayo-Moriones & Bello-Pindado, 2021; Beltrán-Martín & Bou-Llusar, 2018). Del mismo modo, aunque los resultados no son significativos y hay que tomarlos con precaución hasta completar futuros análisis, nuestros resultados apuntan a que existen diferencias entre los empleados que realizan tareas complejas y los que no, en línea con estudios previos (Bayo-Moriones et al., 2015; Ollo-López et al., 2016; Subramony, 2009). Finalmente, las variables de control consideradas en el estudio, aunque son significativas, apenas tienen influencia en los modelos planteados.

## 2.6 Identificar modelos de interacción de las categorías del modelo AMO (sumativo; multiplicativo; otros)

La proposición original del modelo AMO afirma que los trabajadores necesitan la motivación apropiada para ofrecer un esfuerzo superior al esperado, deben tener las habilidades necesarias para que dicho esfuerzo sea significativo, y las organizaciones han de ofrecerles las oportunidades adecuadas para participar (Appelbaum et al., 2000). En base a esta afirmación, al inicio del trabajo consideramos que predominarían los enfoques multiplicativos, puesto que a priori es la interacción que mejor puede explicar las sinergias entre las prácticas de alta implicación. Sin embargo, a lo largo de la tesis apenas hemos encontrado estudios que evalúen el enfoque multiplicativo.

En la revisión sistemática del primer artículo identificamos tres modelos de interacción que habían sido considerados en la literatura de RRHH para explicar el modelo AMO: el enfoque sumativo, el multiplicativo, y una combinación de ambos. Sin embargo, no existía un consenso para determinar cuál de ellos explicaba mejor las interacciones entre las tres categorías del modelo AMO, e incluso algunos autores sostenían que estas interacciones eran desconocidas hasta la fecha (Knies & Leisink, 2014). De manera similar, otros autores argumentaban que el modelo no había sido comprobado de manera empírica o que cada una de las categorías únicamente habían sido validadas de manera independiente (Demortier et al., 2014). Algunos autores defendían que el modelo AMO era multiplicativo, y que si alguna de las categorías no estaba presente era difícil aumentar el rendimiento (Blumberg & Pringle, 1982; Bos-Nehles et al., 2013; Delery, 1998; Vroom, 1964). La razón esgrimida es que, si cada una de las categorías refuerza a las otras dos, los niveles bajos de una de ellas afectarán de manera negativa al rendimiento (Kim et al., 2015). En el caso extremo de que una de ellas no exista, entonces el rendimiento debería ser nulo (Charles et al., 1986; Ozcelik & Uyargil, 2015). En la primera revisión bibliográfica únicamente encontramos cuatro artículos que consideraban el enfoque multiplicativo, en línea con algunos autores que argumentaban que no existían suficientes investigaciones al respecto (Obeidat et al., 2010), o que



consideraban que en realidad nunca había sido empíricamente demostrado (Bos-Nehles et al., 2013; Siemsen et al., 2008). Los cuatro estudios están descritos con detalle en nuestro primer artículo. Dos de ellos proporcionan verificación empírica al modelo multiplicativo (Kim et al., 2015; Obeidat et al., 2010), mientras que los otros dos no hallan efectos positivos en sus análisis estadísticos (Gould-Williams & Gatenby, 2010); o concluyen que el rendimiento no depende de la interacción entre las tres categorías, sino entre dos de ellas, siempre y cuando una sea la motivación (Bello-Pintado, 2015). Otros autores consideraban que el modelo se describe mejor con una función aditiva (Bos-Nehles et al., 2013; Boxall & Purcell, 2003). Con este enfoque, el rendimiento puede optimizarse a través de una de las categorías del modelo, que incluso puede compensar niveles bajos en las otras dos (Kim et al., 2015). Una de las razones en las que se basa este enfoque es que cada una de las categorías del modelo tiene diferentes objetivos. Por tanto, es posible encontrar organizaciones que focalicen sus esfuerzos únicamente en desarrollar la motivación, las habilidades, o las oportunidades (Kroon et al., 2013). Nosotros, sin embargo, consideramos que son necesarios niveles mínimos de cada una de las categorías para asegurar los resultados. En la revisión bibliográfica, la mayoría de los estudios empíricos adoptaban un modelo sumativo, midiendo de manera independiente los efectos de cada una de las categorías (Boselie, 2010; Ganli et al., 2014; Guerci et al., 2015; Tuuli & Rowlinson, 2009), o bien creando un índice unitario con prácticas de las tres categorías y realizando análisis en base a un enfoque sumativo (C. Armstrong et al., 2010; Bainbridge, 2015; Bal & De Lange, 2015; Sarikwal et al., 2013). Finalmente, otros autores argumentaban que unas categorías tenían efecto directo sobre el rendimiento, mientras que las otras moderaban dicho efecto. Por este motivo, apuntaban que era mejor considerar el modelo combinando los enfoques sumativo y multiplicativo. En nuestra revisión de literatura no hallamos muchos ejemplos de este último enfoque. Los resultados de un estudio, por ejemplo, sostienen que las habilidades son un requisito imprescindible para asegurar el rendimiento, y su efecto está moderado por las oportunidades, pero no por la motivación (Bos-Nehles et al., 2013). De manera similar, otro estudio argumenta que la motivación es la categoría indispensable, y las otras dos las moderadoras (Hughes, 2007). Finalmente, otro artículo sugiere que las oportunidades moderan el impacto directo de las habilidades y la motivación (Knies & Leisink, 2014).

En la revisión de literatura llevada a cabo en el último año observamos que el número de estudios empíricos había crecido notablemente. En el **anexo C** presentamos un resumen gráfico del enfoque utilizado por cada uno de los artículos seleccionados. La mayoría de los estudios sigue apostando por planteamientos sumativos a la hora de combinar las prácticas, en línea con otra revisión de literatura reciente (Boon et al., 2019). La principal novedad al respecto la ofrecen algunos autores que plantean modelos distintos, como el modelo del factor limitante, en el que el efecto aditivo de las categorías del modelo depende del factor más pequeño (Dasí et al., 2021; Tuuli & van Rhee, 2021). A modo de ejemplo, las políticas dirigidas a potenciar la motivación y las oportunidades se verán afectadas si los empleados no poseen las habilidades necesarias. Otros autores estudian el concepto de individualmente necesario y

conjuntamente suficiente, y argumentan que cada una de las tres categorías del modelo es necesaria, y puede por tanto limitar el resultado (Hauff et al., 2021; Tuuli & van Rhee, 2021). La premisa de suficiente implica que el efecto limitante desaparece si se mejora el factor más pequeño ya que, en contra de la lógica aditiva, hay actividades de recursos humanos que no pueden ser sustituidas o compensadas por otras (Hauff et al., 2021). Con respecto al modelo multiplicativo, hemos hallado pocos estudios que evalúen la interacción de las tres categorías entre sí, y además tampoco existe un consenso claro en sus conclusiones. Algunos autores apuntan a que el modelo multiplicativo no es capaz de predecir mejores resultados (Hosseingholizadeh et al., 2016), mientras otros afirman que sí existen sinergias positivas (Pham et al., 2020). Otros estudios sugieren que los resultados se predicen mejor empíricamente con un modelo aditivo (Tuuli & van Rhee, 2021), e incluso algunas investigaciones sostienen que pueden incluso existir sinergias negativas (Ho & Kuvaas, 2020). Finalmente, hay autores que concluyen que el modelo predice mejor el rendimiento en base a la complejidad, siendo el multiplicativo el más conveniente para proyectos complejos (Dasí et al., 2021). Respecto a los modelos híbridos, en los que hay categorías con efecto directo sobre los resultados y otras moderadoras, hemos hallado algunos más que en la primera revisión, con resultados diversos (Alba et al., 2021; Andreeva & Sergeeva, 2016; Bayo-Moriones & Bello-Pindado, 2021; Beltrán-Martín & Bou-Llusar, 2018; Cai et al., 2020; Chung & Pak, 2021; Guerci et al., 2017; Hosseingholizadeh et al., 2016; Pham et al., 2020).

## 2.7 Evaluar el grado de utilización de prácticas de alta implicación en el marco laboral español

A lo largo de la tesis hemos realizado análisis estadísticos utilizando datos de empleados españoles. Hemos extraído las muestras de fuentes secundarias muy representativas de la población, que describimos en el punto 2.3 de la sección de introducción. La desventaja de las fuentes de información secundaria es que no podemos modificar el diseño del cuestionario, por lo que siempre hay cuestiones específicas sobre las que no podemos obtener información precisa. Sin embargo, la ventaja de utilizar estas fuentes es que disponemos de una muestra muy amplia, de calidad y sin sesgos. Además, las encuestas analizadas contienen ítems relacionados con los objetivos de la investigación, que por tanto podemos utilizar para asociar las prácticas de alta implicación y los resultados en el marco del modelo AMO.

Uno de los objetivos del segundo y tercer artículo de la tesis es evaluar la presencia y el peso relativo sobre el salario total de los programas de remuneración variable en las empresas españolas. Para ello, utilizamos la encuesta salarial realizada por el INE cada cuatro años, y que recoge datos sobre la distribución y estructura de los salarios en España. En el segundo artículo realizamos un análisis piloto utilizando únicamente los datos de la serie de la EES-2006, porque el objetivo es determinar y comprobar una metodología que pueda ser replicada en el resto de las series disponibles. En la encuesta participaron más de 230.000 personas pertenecientes a alrededor de 27.300 centros de trabajo. En el tercer artículo analizamos tres series, pudiendo así analizar la evolución

de los programas de remuneración económica en distintas etapas económicas. Las tres últimas series disponibles en el momento de redacción del artículo eran, además de la EES-2006, las correspondientes a los años 2010 y 2014. Por otro lado, es interesante averiguar el motivo por el que a partir de la EES del año 2010 dejan de desagregarse componentes salariales relacionados con la remuneración variables que sí están presentes en la encuesta del año 2006 y anteriores.

La EES contiene varios ítems asociados a la categoría de motivación extrínseca del modelo AMO. El salario base no se considera una fuente de alta implicación, puesto que normalmente está regulado por convenios colectivos o de empresa y es idéntico para todos los trabajadores del mismo nivel (Marín-García & Conci, 2012). Sin embargo, sí se consideran prácticas de alta implicación la remuneración basada en el rendimiento colectivo o individual, los complementos basados en las competencias o en el puesto de trabajo, las gratificaciones extraordinarias, la seguridad en el empleo y otras formas de remuneración variable no económicas, ya que todas ellas contribuyen a alinear los objetivos de los empleados y la organización, y a mejorar los indicadores clave de la empresa (Lawler III, 1986; Marín-García & Conci, 2012). En el marco conceptual del segundo y tercer artículo explicamos con detalle los componentes de compensación considerados para el estudio, cuyo resumen presentamos en la tabla 10.

Tabla 10: Relación entre EES y programas de participación económica

Encuesta de estructura salarial (INE)		Componentes de la compensación
Salario base mes		Sueldo base sin complementos
Pago por horas extraordinarias mes		Pago por horas extraordinarias
Total de complementos salariales mes (periodicidad fija)	Pluses por turno (cuantía fija)	Complementos salariales basados en el puesto de trabajo
	Otros complementos de cuantía fija	Complementos salariales basados en el puesto de trabajo Complementos por competencias o habilidades personales
	Complementos de cuantía variable	Complementos basados en el rendimiento de ciclo muy corto
Total de pagos extraordinarios	Periodicidad y cuantía fijos	Pagos extraordinarios Gratificaciones extraordinarias
	No periódicos y cuantía variable	Complementos basados en el rendimiento de ciclo largo
	En especie	Pueden asociarse a cualquiera de los componentes monetarios de remuneración
Tipo de contrato de trabajo (temporal / Indefinido)		Seguridad en el empleo
No disponible en EES		Recompensas no monetarias

Fuente: elaboración propia

Los resultados del análisis piloto de la serie del 2006 indican que tanto el grado de uso como la intensidad de los programas de remuneración asociados a la motivación extrínseca en España son bajos. Puede deberse a que dichos programas dependen en gran medida de la estructura salarial vigente, que a su vez está influenciada por una legislación laboral con poca flexibilidad en la que los incentivos variables parecen ser excepcionales. Por tanto, podemos afirmar que, en el marco del modelo AMO, la categoría de motivación no parece estar relacionada en España con los incentivos económicos. En el cálculo del porcentaje de los componentes salariales sobre el total, observamos que el salario base es con diferencia la parte principal, seguido por los complementos fijos y las gratificaciones extraordinarias fijas. Los incentivos variables,

comúnmente asociados al pago por rendimiento o por competencias representan una pequeña parte del salario total, mientras que las gratificaciones anuales variables, las horas extra o los pagos en especie constituyen una parte marginal del total percibido. Por otro lado, estos datos nos permiten apuntar a que la desaparición de los detalles de componentes salariales variables a partir de la serie de 2010 fue quizás provocada por la baja incidencia de este tipo de programas en la encuesta del 2006.

En el tercer artículo realizamos un análisis pormenorizado y completo de las tres series de datos. Dado que a partir del 2006 no se reflejan datos relativos a complementos salariales variables, uno de los objetivos es determinar si se debe a la baja incidencia de los programas de remuneración asociados a la motivación extrínseca. Con respecto a la intensidad de los diferentes componentes salariales, nuestros resultados indican que el sueldo base es el principal componente en las tres series (alrededor del 73%), seguido por los complementos salariales mensuales no asociados a la turnicidad (aprox. el 26% en las tres series), y las gratificaciones extraordinarias fijas ( $\approx$  15% en 2006; 11% en 2010 y 2014). Los complementos de turnicidad, el pago por horas extras y las retribuciones en especie representan una parte insignificante del salario ( $\approx$  1%). Estos resultados son consistentes con otros autores que demuestran la rigidez de los sistemas de fijación de salarios en España (Martínez Matute, 2016; Moral Arce & Maza Fernández, 2010). En las series del 2010 y 2014 tanto los pagos extraordinarios anuales como los complementos salariales mensuales no están desagregados entre fijos y variables. Por este motivo, es imposible determinar qué parte de ellos están relacionados con incentivos variables asociados al rendimiento. Sin embargo, como la incidencia y la intensidad de los programas de remuneración son muy similares en las tres series, utilizamos los datos del 2006 para estimar los porcentajes. De hecho, la incidencia agregada de los complementos mensuales no asociados a la turnicidad es incluso inferior en las series de 2010 y 2014. En la serie del 2006, los resultados indican que la intensidad de los complementos variables mensuales y anuales representa únicamente el 5.5% y el 1.8% del total del salario. Estos resultados confirman la baja incidencia de los programas de remuneración variable y permiten concluir que este hecho puede ser el causante de la desaparición de dichas variables en las sucesivas encuestas. En otras palabras, estos programas no son relevantes en 2010 y en 2014, como tampoco lo eran en 2006, por lo que se decidió simplificar el cuestionario. La baja incidencia de dichos programas puede deberse a diversos motivos. En primer lugar, la rigidez de la negociación colectiva en España fomenta la homogenización de salarios, e impide adaptar los salarios a las condiciones específicas de cada organización (Martínez Matute, 2016). Por otro lado, algunos autores sostienen que la motivación extrínseca está asociada a resultados a corto plazo, y que las fuentes de motivación intrínseca se vinculan con compromisos más sólidos y duraderos (Beltrán-Martín & Bou-Llugar, 2018; Schimansky, 2014), por lo que el uso de las prácticas relacionadas con la motivación externa podría verse afectado.

En el cuarto artículo investigamos la relación entre las prácticas de RRHH y la satisfacción laboral utilizando los datos de empleados españoles del Programa para la Evaluación de competencias de adultos (PIAAC). La muestra española incluye 6055 casos, de los cuales hemos utilizado 3386, incluyendo únicamente a los trabajadores. El cuestionario de

PIAAC contiene algunos ítems relacionados con las prácticas de alta implicación, por lo que podemos observar su incidencia mediante herramientas de estadística descriptiva. Aunque en los análisis del cuarto artículo hemos incluido cuatro prácticas, tal y como reflejamos en el punto 2.3 de la sección de resultados de esta tesis (tabla 9), en la tabla 11 observamos todas las prácticas susceptibles de ser consideradas, sus ítems asociados, y la categoría del modelo AMO en la que comúnmente se clasifican. Como podemos observar, muchas de ellas hacen referencia a las funciones principales de la gestión de recursos humanos: selección, formación, evaluación del rendimiento, comunicación interna, organización del trabajo y relaciones laborales, recompensas, conciliación, salud y clima laboral (Marín-García & De Miguel, 2001). En el **anexo D** de la tesis se muestran asimismo las tablas de frecuencia y los histogramas para valorar la incidencia en el contexto español. En base a las respuestas de los empleados en el marco PIAAC, podemos considerar que existe presencia de prácticas de alta implicación. Muchos encuestados consideran que gozan de autonomía en el trabajo, que trabajan en equipo, que reciben formación en el puesto de trabajo, que poseen motivación intrínseca para aprender, que existe flujo de información entre compañeros, y que pueden participar en algunas decisiones acerca de sus tareas. Sin embargo, los resultados indican niveles bajos de flexibilidad, apoyo de la dirección, y transferencia formal de información. No obstante, estas respuestas se basan en percepciones individuales y no es posible conocer si las empresas ponen en marcha políticas y prácticas formales, o si por el contrario dichas prácticas se trabajan de manera informal. Por este motivo, sería conveniente evaluar en el futuro el grado de uso y la intensidad de las prácticas de alta implicación a través de cuestionarios diseñados específicamente para tal fin.

Tabla 11: HRM practices, PIAAC items & AMO model

HRM practices	PIAAC item	Skills bundle	Motivation bundle	Opportunity bundle
Job autonomy	F_Q03a; F_Q03c			X
Teamwork	F_Q01b			X
Staff training	D_Q13a; D_Q13b; D_Q13c	X		
Self-determination learning style	I_Q04b; I_Q04d; I_Q04h I_Q04j; I_Q04l; I_Q04m		X	
Flexible work	D_Q11d		X	
Supportive management	F_Q03b; F_Q02e			X
Information sharing	F_Q02a; F_Q02b; F_Q02c;			X
Participatory decision-making	D_Q11a; D_Q11b; D_Q11c			X

Fuente: elaboración propia

## 2.8 Comprobar la validez del modelo AMO. Especificar el modelo AMO como multiplicativo o sumativo

Durante la elaboración de la tesis hemos revisado una gran cantidad de artículos relacionados con el modelo AMO. De este modo hemos creado una base documental amplia que empleamos como soporte teórico de nuestra investigación. La gran mayoría de los estudios seleccionados consideran el modelo en su marco teórico. Además, muchas investigaciones utilizan el modelo de manera directa o indirecta para clasificar las prácticas de alta implicación y analizar, aplicando métodos estadísticos, la relación entre los sistemas de alta implicación y distintas propuestas de rendimiento.

Determinar la validez del modelo es una tarea compleja, debido a que en la literatura de gestión de recursos humanos existe un gran abanico de propuestas metodológicas. Los estudios consideran distintas acepciones del término rendimiento o resultado, un rango amplio de prácticas de alta implicación asociadas a cada categoría del modelo AMO, y diversos factores de control. Además, los datos empleados provienen de fuentes de información distintas en cada investigación, proporcionando resultados y conclusiones muy diversas. Finalmente, cada estudio se enmarca en un contexto diferente, en el que existen fuerzas internas y externas que influyen en los análisis. Por este motivo, aunque muchos estudios confirman los efectos positivos de los sistemas de alta implicación, es complicado generalizar sus resultados para determinar la validez del modelo en cualquier contexto. Por otro lado, también existen autores que señalan incertidumbres sobre los efectos del modelo (D. Guest et al., 2000; Jiang, Lepak, Hu, et al., 2012; Ulrich, 1997), o quienes argumentan que existe un conocimiento limitado acerca de cómo realmente los sistemas afectan al desempeño (D. Guest, 2011; Paauwe, 2009). Pese a todo ello, consideramos que es interesante reflejar algunos ejemplos de las validaciones parciales o completas del modelo que se han obtenido en la literatura de recursos humanos. En el **anexo A** hemos reflejado las hipótesis planteadas por los artículos en la primera revisión bibliográfica (1993-2016), en el caso de que existan, así como su aceptación o rechazo. Del mismo modo, en el **anexo E** se enumeran las hipótesis relacionadas con el modelo AMO de algunos de los estudios publicados a partir del 2016, indicando además si estas hipótesis han sido aceptadas o no.

Además de la evidencia previa resumida en la tabla anterior, en el cuarto artículo evaluamos cuál de los dos enfoques más habituales en la literatura acerca de cómo combinar las prácticas de alta implicación predice mejor la relación entre dichas prácticas y la satisfacción en el trabajo: el sumativo o el multiplicativo. Aunque en estudios previos hemos hallado otros modelos distintos, como detallamos en el punto 2.6 de la sección de resultados, lo cierto es que su presencia es hasta el momento residual, y la mayoría de los estudios utilizan un enfoque aditivo en sus análisis. Por otro lado, el modelo multiplicativo es el que a priori mejor puede examinar las sinergias entre las categorías del modelo AMO. En la literatura existen pocos estudios que evalúen una determinada muestra con distintos enfoques. Además, tampoco en dichos estudios hay un consenso acerca de qué modelo predice mejor los resultados. Algunos estudios dan soporte al modelo multiplicativo (Dasí et al., 2021), mientras que otros dicen que no hay

resultados concluyente (Guerci et al., 2017), y otros sostiene que los resultados se explican mejor con un modelo aditivo, siempre y cuando existan niveles mínimos en las tres categorías (Tuuli & van Rhee, 2021).

Para llevar a cabo el estudio, utilizamos datos de empleados españoles de la encuesta PIAAC. La encuesta proporciona información con la que podemos construir cada una de las categorías del modelo. Propusimos el aprendizaje continuo en el puesto de trabajo para evaluar la categoría de habilidades; la participación en los procesos de decisión y la autonomía en el trabajo para evaluar las oportunidades; y la motivación intrínseca hacia el desarrollo y el aprendizaje individual para evaluar la categoría de motivación. En este último caso, creímos conveniente evaluar la motivación intrínseca, debido a que en nuestro anterior artículo observamos que la motivación extrínseca en forma de incentivos económicos era poco relevante en el contexto español. Como variable independiente utilizamos la satisfacción en el trabajo. Finalmente, utilizamos la edad, el tamaño de la empresa y el sector como variables de control; y la complejidad de las tareas y los puestos de responsabilidad como variables moderadoras.

Nuestros resultados muestran que tanto el modelo sumativo como el multiplicativo no son capaces de predecir en gran medida la variación de la satisfacción laboral del empleado. Probablemente es debido a que la satisfacción en el trabajo depende en un porcentaje limitado de la gestión de recursos humanos, pero también depende de otros factores como la estrategia de la organización, el entorno sociocultural y económico, el puesto de trabajo, el clima laboral, las características de los empleados y directivos, o las relaciones interpersonales (Ahmad & Yekta, 2010; Al Doghan et al., 2019; Heffernan & Dundon, 2016; Herzberg, 1974; Katou, 2013; Locke & Latham, 1990; Prentice, 2022). Otra posible causa podría ser los datos utilizados, aunque consideramos que es una muestra grande, representativa de la población y poco sesgada. No obstante, en el futuro sería interesante utilizar otras fuentes de datos o establecer comparaciones con datos de otros países que contempla la muestra PIAAC.

Aunque no son especialmente relevantes y es necesario realizar análisis complementarios en el futuro, nuestros resultados indican que cuando se introducen interacciones dobles entre las categorías del modelo éste predice mejor la variación de la satisfacción laboral. Por tanto, los resultados dan un leve soporte al enfoque multiplicativo, en línea con estudios previos (Dasí et al., 2021). Nuestros resultados son acordes a estudios previos que afirman la conveniencia de considerar interacciones dobles en lugar de interacciones entre las tres categorías (Bos-Nehles et al., 2013; Pham et al., 2020). En esta línea, encontramos resultados significativos cuando interactúan las habilidades y la motivación. Es decir, niveles bajos de habilidades no influyen en la motivación, pero sí lo hacen cuando se incrementan las habilidades. Lo mismo sucede entre la motivación y las oportunidades, con efectos más pronunciados. Si la oportunidad de participar es baja, la motivación no influye en la satisfacción laboral, pero si se incrementan las oportunidades, también lo hace la satisfacción, especialmente en empleados con mayor motivación. Nuestros resultados no son significativos cuando interaccionan las habilidades y las oportunidades.

Del estudio se desprenden otras consideraciones interesantes. En primer lugar, los resultados revelan una mayor influencia de la categoría de habilidades, mientras que la motivación intrínseca, tal y como la hemos considerado, apenas influye en los resultados. Nuestros resultados son acordes a investigaciones previas que demuestran que las habilidades, y en ocasiones las oportunidades, son fundamentales, mientras que la motivación modera los efectos de la primera categoría o de ambas (Beltrán-Martín & Bou-Llusar, 2018; Bos-Nehles et al., 2013; Guerci et al., 2017; Jyoti & Rani, 2017; Pham et al., 2020; Vermeeren, 2017). En segundo lugar, aunque con poca relevancia, los resultados de ambos modelos apuntan a que los empleados con responsabilidad gozan de una mayor satisfacción laboral, en línea con estudios previos que consideran que la variedad de tareas exigida es mayor en tareas de responsabilidad, lo cual exige mayor habilidades y conocimientos (Bayo-Moriones & Bello-Pindado, 2021; Beltrán-Martín & Bou-Llusar, 2018). El modelo multiplicativo, además, muestra diferencias significativas en la interacción entre las categorías de habilidad y motivación, con mejores resultados en los empleados con puestos de responsabilidad, en línea con investigaciones previas que muestran que existe relación entre ambas categorías (Hosseingholizadeh et al., 2016). Finalmente, los resultados apuntan a que también hay algunas diferencias a favor de los empleados que realizan tareas complejas, en línea con estudios previos (Bayo-Moriones et al., 2015; Ollo-López et al., 2016; Subramony, 2009). Sin embargo, hay que tomar estos resultados con precaución (Marin-Garcia & Alfalla-Luque, 2019a), ya que no existe invarianza parcial al analizar las submuestras de los empleados que realizan tareas complejas y los que no.



## Capítulo 7: Conclusiones



## 1. Conclusiones

Esta tesis se articula en torno al modelo AMO y su validez para determinar la relación que existe entre los sistemas de alta implicación de recursos humanos y el rendimiento o resultados. Las preguntas de investigación planteadas en los artículos que conforman la tesis se dirigen a dilucidar aspectos relacionados con las características del modelo y sus implicaciones teóricas y prácticas; los elementos que forman el modelo y cómo interactúan entre sí; los factores internos y externos que moderan los efectos del modelo; la evidencia científica que existe acerca de su validez; y su difusión en el área de la gestión de RRHH. Por otro lado, estamos interesados en determinar el grado de utilización y la importancia de los sistemas de alta implicación en el contexto laboral español. Dichos programas son frecuentes en la literatura anglosajona (Marín-García et al., 2008). Sin embargo, es interesante conocer si tienen la prevalencia suficiente en el contexto español para ser tenidos en cuenta en los modelos de investigación o si, como apuntan algunos autores, existe una difusión menor (Bayo Moriones & Ortín Angel, 2012). En este último caso, determinar los beneficios de los sistemas de alta implicación puede inducir el desarrollo de políticas de gestión empresarial destinadas a introducir elementos de mejora con efectos positivos en los resultados individuales y organizacionales. Por todo ello, en los análisis hemos utilizado datos relativos a trabajadores de organizaciones españolas. Como hemos subrayado en la sección de introducción, empleamos fuentes secundarias que nos permiten obtener una muestra poco sesgada y muy representativa de la población. Además, las bases de datos utilizadas forman parte de programas europeos, por lo que sería sencillo replicar los análisis en el futuro para comparar los resultados y determinar las características de cada país en relación con nuestro ámbito de estudio.

La tesis se ha elaborado por compendio de artículos que, aunque son independientes, giran en torno a un tema central de investigación común. Cada artículo tiene sus propios objetivos y metodología, lo que nos permite profundizar en aspectos específicos que puedan ser sometidos a los procesos de revisión de las revistas científicas. El primer artículo es una revisión sistemática de literatura que profundiza en diversos aspectos del modelo para así crear un marco teórico estructurado que sirva además como punto de partida de la investigación. Además, establecemos un protocolo de búsqueda que podemos replicar posteriormente para observar la evolución del área de estudio al cabo del tiempo (Marín-García, 2015). En el segundo y tercer artículo hemos puesto el foco en la categoría de motivación, en su dimensión extrínseca. La razón de analizar de manera independiente una de las categorías del modelo AMO es que nos permite determinar la incidencia de programas de RRHH específicos sin que los resultados se vean alterados por interacciones con otras prácticas. De acuerdo con muchos autores, los incentivos basados en el rendimiento son uno de los pilares básicos de los sistemas de alta implicación (Appelbaum et al., 2000; Boon et al., 2019; Boselie et al., 2005; Combs et al., 2006; Perello-Marin & Ribes-Giner, 2014; Posthuma et al., 2013), por lo

que su grado de uso está estrechamente relacionado con la incidencia global de dichos sistemas en un contexto determinado. Por otro lado, la motivación extrínseca está vinculada a las categorías de oportunidades y habilidades, ya que por ejemplo los incentivos basados en el rendimiento de grupo se asocian al trabajo en equipo y su correspondiente distribución de roles, al adecuado flujo de información y a la participación en los procesos de decisión. En el cuarto artículo evaluamos los distintos modelos de interacción de las categorías del modelo AMO para predecir los resultados a nivel individual. Específicamente estudiamos la satisfacción en el trabajo, que además podría mediar entre los sistemas de RRHH y los resultados a nivel organizacional (Boselie, 2010; Boxall & Macky, 2009; Lepak et al., 2006). En la elaboración de este artículo hemos llevado a cabo una revisión bibliográfica similar al del primer artículo, que nos permite observar la evolución del modelo en la literatura al cabo de cinco años.

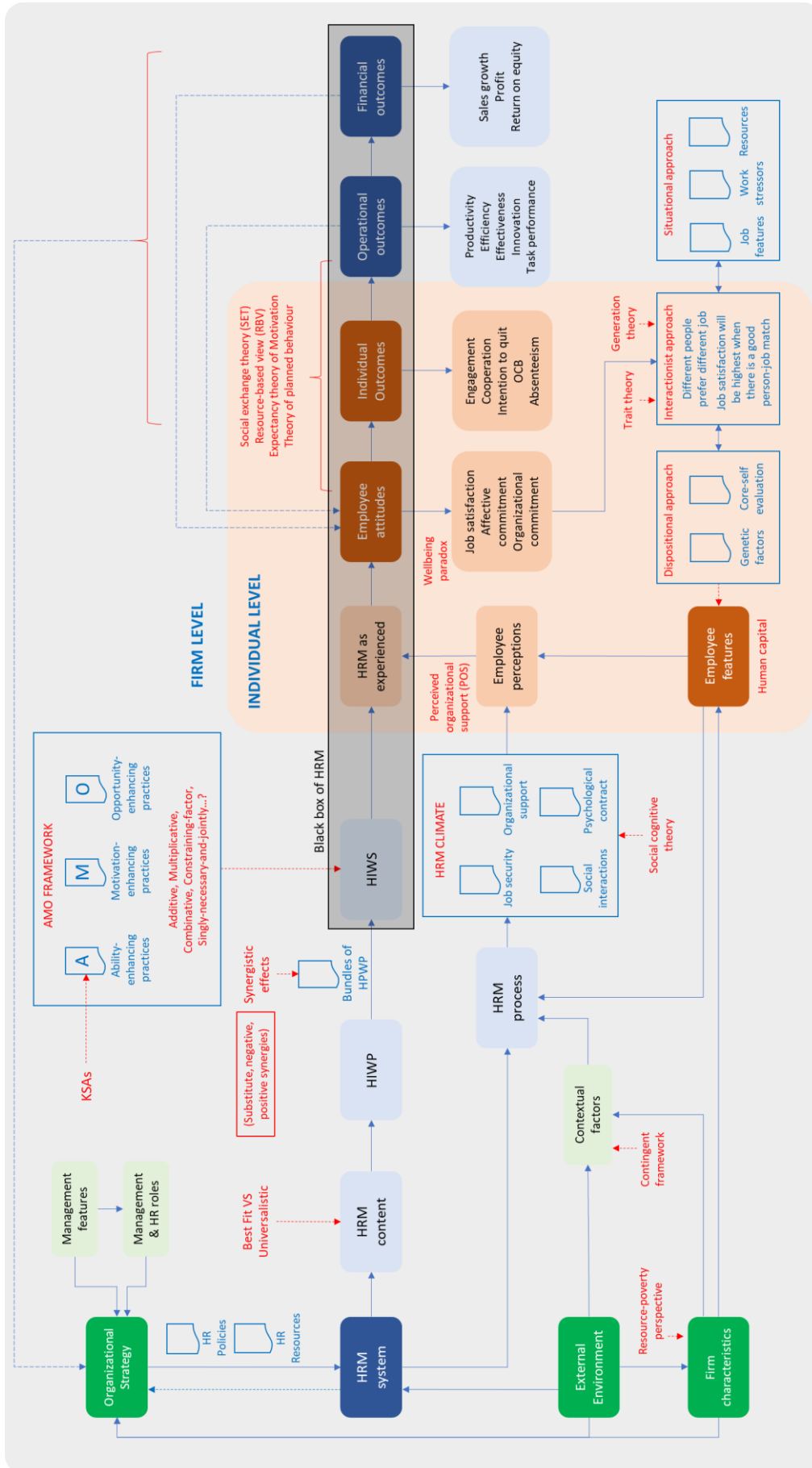
De acuerdo con nuestra investigación, el modelo AMO proporciona una estructura excelente para explorar y comprender la relación entre la gestión de recursos humanos y los resultados a distintos niveles. No en vano, la difusión del modelo en la literatura desde su aparición es muy extensa y pese a que existen pocas réplicas del modelo de la manera exacta en que fue concebido, muchas investigaciones han articulado sus hipótesis y análisis empíricos en base a las agrupaciones de prácticas planteadas por los postulados teóricos del modelo. Como resultado, pese a que existen controversias al respecto, numerosos artículos confirman los efectos positivos de los sistemas de alta implicación a través de validación de hipótesis desarrolladas en el marco del modelo AMO. La lógica que establece la proposición inicial del modelo parece estar fuera de toda duda. En este sentido, un empleado que disponga de las habilidades y aptitudes necesarias desarrollará su trabajo mejor que otro que carezca de ellas; si está motivado estará en mejor disposición de implicarse y ofrecer un rendimiento superior; y si la organización fomenta la participación de los empleados, y brinda las circunstancias adecuadas para realizar el trabajo de manera adecuada, los empleados podrán hacer un uso completo de sus habilidades.

Sin embargo, no existe un consenso claro que permita generalizar los resultados y establecer una guía de actuación precisa que pueda adaptarse a cualquier situación o contexto. De acuerdo con nuestro estudio, existen dos razones fundamentales. En primer lugar, hay en la literatura de RRHH una gran variedad de fuentes de información y de enfoques metodológicos que conducen a resultados muy diversos, y que dificultan la validación de conclusiones generales. En este sentido, aunque no se pone en duda la idea de construir sistemas de alta implicación para aprovechar las sinergias positivas entre las prácticas, algunos autores señalan problemas a la hora de conceptualizar dichos sistemas, sistematizar sus diseños y medidas, y evaluar las diferentes formas de combinar las prácticas (Boon et al., 2019; Lepak et al., 2006; Strauss & Smith, 2009). Por otro lado, el modelo AMO se integra en un entorno complejo donde conviven numerosos factores susceptibles de influir en la relación entre las prácticas de RRHH y

el rendimiento, así como de modificar la propuesta metodológica del modelo (Block & Pickl, 2014; Demortier et al., 2014; D. Guest, 2011). En esta línea, algunos autores señalan el concepto de “caja negra de la gestión de RRHH” (*black box of HRM*) para definir las lagunas de conocimiento existentes a la hora de explicar los mecanismos precisos a través de los cuales los sistemas de recursos humanos alcanzan sus resultados organizacionales propuestos (Becker & Gerhart, 1996; Purcell et al., 2003). Este concepto es popular en la literatura, y aunque durante los primeros años del S.XXI algunos autores sostenían que pocos estudios habían tratado de investigar al respecto (Boselie et al., 2005), en las últimas décadas se han publicado algunos artículos que ponen el foco en resolver el misterio. Con relación al modelo AMO, los estudios que tratan el concepto de la caja negra se centran en el empleado o el factor humano. Distinguimos dos grandes grupos. En primer lugar, las investigaciones que estudian los factores que median entre los recursos humanos y el rendimiento individual, como por ejemplo el clima organizacional (Cafferkey & Dundon, 2015), el rol y las características de los supervisores (Harney & Jordan, 2008), el capital psicológico (Georgiana et al., 2019; Sobaih et al., 2019), el respaldo de la organización (Latorre et al., 2016), las perspectivas de futuro (Korff et al., 2017) o las percepciones y actitudes de los empleados (Gardner et al., 2001; Mansour et al., 2014). En segundo lugar, los estudios que añaden un escalón más y sostienen que el rendimiento individual es realmente el mediador entre la gestión de RRHH y el rendimiento organizacional (Demortier et al., 2014; Messersmith et al., 2011).

El concepto de caja negra es útil para explorar los recorridos entre los sistemas de alta implicación y el rendimiento organizacional. Sin embargo, consideramos que el modelo AMO se integra en un sistema de relaciones más grande y complejo, donde además de los mecanismos que moderan las relaciones entre las prácticas y el rendimiento, operan otros muchos factores que moldean la gestión eficiente de los RRHH. A modo de ejemplo, algunos autores apuntan a la ambigüedad causal, o al hecho de que existan múltiples causas para el mismo efecto (Boxall et al., 2007). Dicho de otro modo, la gestión de recursos humanos puede influenciar positivamente el rendimiento organizacional, del mismo modo que también otros factores económicos o inherentes a la propia organización lo pueden hacer (M. Armstrong & Stephen, 2014). Este hecho podría explicar por qué empresas con los mismos recursos no obtienen los mismos resultados. Posiblemente, definir las políticas e itinerarios apropiados que garanticen un modelo de gestión único que se adapte de manera perfecta a cualquier situación es una tarea imposible. La razón es que existen múltiples realidades y por tanto múltiples posibilidades. Sin embargo, las claves y las evidencias demostradas en la literatura de RRHH juegan sin duda un papel relevante a la hora de tomar decisiones. En el gráfico 10 hemos resumido gráficamente el sistema de relaciones anteriormente comentado. Posteriormente explicamos con detalle cada uno de los elementos que lo componen.

Gráfico 10: Sistema de relaciones HRM



La gestión de recursos humanos está influenciada por la estrategia global de la organización. En este sentido, los departamentos de RRHH diseñan una estrategia acorde a la planificación estratégica y a los objetivos generales de la organización, que se vehicula a través de una serie de políticas y con la programación de los recursos y actividades del equipo, para construir el sistema de gestión de RRHH. Las estrategias organizacionales pueden ser muy variadas y sobre ellas influyen numerosos factores. Algunos de ellos se refieren a características inherentes a la propia organización, otros están relacionados con las personas que interactúan en ella, y otros guarda relación con elementos externos. Estos factores también se relacionan entre sí. Los factores externos afectan a las características de la organización, así como también a las características de los empleados. Las organizaciones, en algunos casos, también son capaces de modificar el entorno, y escogen los recursos humanos en función de sus propias particularidades. Asimismo, las características y roles de los equipos directivos moldean la idiosincrasia de las organizaciones a través de sus aptitudes y decisiones.

A nivel individual, los equipos directivos y los departamentos de recursos humanos están formados por personas particulares. Algunas investigaciones indican que el rol del equipo directivo tiene un impacto notable en la estrategia global, así como en la implantación de las políticas y prácticas de RRHH, ya que su puesta en marcha depende en gran medida de que los responsables comprendan los efectos positivos de ello (Franca & Pahor, 2012; Kroon et al., 2013). En la misma línea, otros autores apuntan a que las organizaciones que tengan directivos con un fuerte carácter emprendedor, estarán más abiertas a la implantación de prácticas que puedan incrementar la participación (Kroon et al., 2013). Además, hay estudios que advierten que las relaciones personales entre los empleados son esenciales para el éxito de la implantación de las prácticas de alta implicación (Gill & Meyer, 2013).

Existen también factores inherentes a la propia organización que condicionan la estrategia empresarial y, por tanto, la gestión estrategia de RRHH. En primer lugar, cada organización define su misión, visión y valores, así como su estructura organizativa. Estos elementos condicionan las decisiones empresariales a todos los niveles. La misión es el propósito o razón de ser, y define la relación con el entorno. La visión define el camino a largo plazo y sirve de aliciente para orientar las decisiones estratégicas. Los valores son el conjunto de principios y creencias que rigen los compromisos adquiridos con los clientes, los empleados y el contexto. En segundo lugar, la elección de la estrategia empresarial condiciona los recursos y acciones que definen el sistema de RRHH. De acuerdo con el modelo de Michael Porter, existen tres estrategias genéricas en base a las ventajas competitivas: la diferenciación, el liderazgo en bajo coste y el enfoque (Porter, 1980). Algunos autores argumentan que las empresas cuya ventaja competitiva se basa en la diferenciación deberían ser más propensas a adoptar prácticas de alta implicación, puesto que sus procedimientos son más flexibles y fomentan la creatividad y la innovación (Cabrera et al., 2003; Ordiz-Fuertes & Fernández-Sánchez,

2003). Por el contrario, las empresas que tratan de minimizar los costes suelen tener procedimientos altamente estructurados para minimizar la incertidumbre. Algunos estudios, sin embargo, demuestran que las prácticas de participación no son necesariamente exclusivas de una tipología de organización (Ordiz-Fuertes & Fernández-Sánchez, 2003; E. Shin, 2013). En tercer lugar, hay autores que cuestionan si el tamaño de la organización es relevante, asumiendo que la puesta en marcha de políticas y prácticas de recursos humanos está influenciada por los recursos disponibles (Welsh et al., 1982), y por tanto sugieren que la menor disponibilidad de ellos y la estructura más sencilla de las organizaciones pequeñas reducen la utilización de prácticas formales de recursos humanos (Kroon et al., 2013). De este modo, las empresas pequeñas tienden a utilizar procesos informales, mientras que a medida que el tamaño se incrementa, son necesarias procedimientos y prácticas formales de RRHH para garantizar una gestión eficiente (Della Torre & Solari, 2013; Wilkinson et al., 2007). En cuarto lugar, la cultura de la organización define estructuras más o menos jerárquicas y puede fomentar entornos participativos que favorezcan la implicación de los empleados. En este sentido, algunos autores apuntan a que la dificultad para introducir cambios en empresas con una larga tradición es considerada como uno de los principales obstáculos para la implantación de las prácticas de alta implicación (Ichniowski et al., 1997). De este modo, las prácticas de alta implicación podrían implantarse con más facilidad en empresas de nueva creación. En quinto lugar, algunas investigaciones han estudiado si existen diferencias sectoriales. Hay autores que argumentan que los programas de participación gozan de mayor presencia en el sector servicios, puesto que el impacto de la implicación de los empleados es clave para garantizar la satisfacción del cliente y, por tanto, la eficiencia de las prácticas de alta implicación es mayor (Cabrera et al., 2003; Ordiz-Fuertes & Fernández-Sánchez, 2003). En esta línea, otros estudios argumentan que las empresas de servicios tienen en los empleados su principal recurso, mientras que las empresas de fabricación deben poner también el foco en la tecnología, equipamiento o materiales, por lo que fomentar la participación es vital en las primeras (Ordiz-Fuertes & Fernández-Sánchez, 2003). Sin embargo, no existe un consenso claro al respecto en la literatura relacionada (N. Wu et al., 2013). También se contemplan diferencias entre organizaciones públicas y privadas. Algunos estudios argumentan que las prácticas relacionadas con las oportunidades de participación, o las recompensas no monetarias como la flexibilidad o la conciliación familiar son más habituales en las organizaciones públicas o sin ánimo de lucro, mientras que los incentivos por productividad son más frecuentes en organizaciones destinadas a obtener beneficios económicos (Kalleberg, 2006). Finalmente, algunos estudios indican que las organizaciones que requieren mano de obra altamente cualificada, como por ejemplo las del sector tecnológico, son más propensas a implantar políticas de recursos humanos (Della Torre & Solari, 2013). Es decir, podría existir una relación entre el grado de uso de las tecnologías de comunicación y las prácticas de alto implicación, especialmente las relacionadas con el trabajo en equipo y la autonomía, puesto que



ambos sistemas funcionan mejor conjuntamente para incrementar la productividad (Bayo-Moriones et al., 2015).

Con relación a los factores externos, es evidente que las organizaciones no funcionan en aislamiento, sino que se sitúan en un contexto determinado. Algunos estudios señalan diferencias significativas entre las dimensiones culturales de una sociedad (Hofstede, 1991), que a su vez pueden determinar en gran medida la estrategia de las empresas. En esta línea, algunas investigaciones apuntan a que la cultura y reglas sociales inherentes a cada país influyen en el nivel de participación de los empleados (Franca & Pahor, 2012; Rabl et al., 2014). En la Unión Europea, por ejemplo, los países del arco mediterráneo son menos propensos a utilizar estilos participativos debido a que existe una cultura más jerárquica en las organizaciones y en la sociedad (Cabrera et al., 2003). No obstante, en los países de la UE también existen regulaciones y directivas comunes que en ocasiones propician similitudes en la implantación de prácticas participativas. Otros autores proponen que las estrategias de RRHH dependen de su adecuación a la cultura de un país (Rabl et al., 2014). Según este argumento, la cultura nacional es un principio sobre el que los empleados vertebran el concepto de trabajo, las relaciones con él, y como esperan ser tratados. Por tanto, si la gestión de RRHH es inconsistente con dichos principios, es menos probable que los empleados desempeñen correctamente sus funciones (Brewster, 1995; Newman & Nollen, 1996). Otro factor comúnmente considerado es el nivel de competitividad del mercado, ya que puede forzar la adopción de metodologías eficientes de trabajo estrechamente vinculadas a la gestión eficiente de los RRHH (Cabrera et al., 2003; Ordiz & Fernández, 2005; N. Wu et al., 2013). La presencia sindical también ha sido objeto de estudio, aunque desde perspectivas diferentes. Algunos estudios señalan que los programas de participación tienen menos presencia en organizaciones con fuerte presencia sindical porque existe un conflicto de intereses ya que, por ejemplo, el pago en base a rendimientos individuales se aleja de la solidaridad colectiva propuesta por los sindicatos (Gill, 2009; Lawler et al., 2010; E. Shin, 2013). Sin embargo, otros autores sostienen que la propia presencia sindical puede superar la resistencia de los equipos directivos a ofrecer una mayor participación y flexibilidad a los empleados, así como a desarrollar una estructura de comunicación transparente (Gill, 2009; Gill & Meyer, 2013). Finalmente, otros factores externos susceptibles de influir o modificar la estrategia empresarial son la legislación laboral de un país, las relaciones con clientes y proveedores, los avances tecnológicos, las nuevas oportunidades y amenazas, los cambios de hábitos o las nuevas tendencias.

Si los factores individuales, organizativos y externos son tan variados, parece obvio pensar que también lo serán los sistemas de gestión. El sistema de gestión de recursos humanos (*HRM system*) de una empresa define, entre otros aspectos, los procesos a implantar, las acciones a realizar, y los recursos destinados a tal efecto. Como resultado de dichas decisiones, se detallan las prácticas individuales a través de las cuales tratan

de lograrse los objetivos estratégicos (Boselie et al., 2005). El conjunto de las prácticas que construyen el sistema de gestión de RRHH se denomina contenido (*HRM content*). Hay numerosas investigaciones que tratan de dilucidar cual es el contenido óptimo. Aunque el número y la tipología de las prácticas difieren en función de cada estudio (Katou, 2017), siempre están relacionadas con las grandes áreas de la gestión de RRHH: estrategias de búsqueda y contratación destinadas a disponer del mejor capital humano; planes de formación y desarrollo de los empleados para incrementar la capacidad de la organización; esquemas de incentivos destinados a incrementar la motivación y aumentar de este modo la productividad; y sistemas de relaciones interpersonales que mejoren el clima laboral y alineen los intereses de los empleados y de la organización (Posthuma et al., 2013; Takeuchi et al., 2007). Como hemos comentado a lo largo de la tesis, hay un amplio abanico de prácticas de alta implicación (HIWP) destinadas a otorgar a los empleados las habilidades, motivación e información necesarias para intervenir en los procesos de decisión (Conci, 2013). Por tanto, pese a que el número de prácticas consideradas en cada estudio se ha reducido en los últimos años (Boon et al., 2019), el contenido del sistema varía en función de cada investigación. Además, existe controversia acerca de si es más conveniente utilizar un enfoque universal, en el que se utilizan las mejores prácticas con independencia del contexto (Pfeffer, 1994), o si por el contrario los sistemas deben adaptarse a las particularidades y el contexto de cada organización (Schuler & Jackson, 1987). Una vez definido el contenido del sistema de gestión, se suelen agrupar las prácticas de alta implicación en sistemas de alta implicación (HIWS). Los sistemas se basan en la noción de complementariedad (Becker & Gerhart, 1996). De hecho, hay consenso en la literatura a la hora de considerar que los efectos de los sistemas son superiores a la suma de los efectos individuales de las prácticas (Delery, 1998), y algunos estudios han confirmado la existencia de sinergias positivas (Datta et al., 2005; Ichniowski et al., 2010; MacDuffie, 1995). Otros autores, sin embargo, no han podido demostrar las sinergias entre prácticas (Jiang, Lepak, Hu, et al., 2012; Macky & Boxall, 2007), e incluso hay autores que afirman que no todas las sinergias son positivas, sino que pueden ser sustitutivas o incluso negativas (Ho & Kuvaas, 2020). El modelo AMO es uno de estos sistemas, y propone integrar sus tres grupos de prácticas (habilidades, motivación y oportunidades) para que sus efectos se refuercen mutuamente (Appelbaum et al., 2000; Boxall & Purcell, 2003). Por ejemplo, la eficacia de los trabajadores cualificados y motivados es limitada si la estructura organizacional restringe su capacidad de decisión (Ho & Kuvaas, 2020; MacDuffie, 1995). Sin embargo, algunos aspectos dificultan establecer conclusiones definitivas con respecto al modelo, como la gran variedad de enfoques y propuestas metodológicas, la falta de replicación sistemática de estudios, la escasez de estudios longitudinales, o la poca presencia de modelos multiplicativos que determinen de manera clara los efectos sinérgicos. Con respecto a los distintos enfoques acerca de cómo combinar las prácticas, existe controversia en determinar si el modelo actúa bajo una lógica multiplicativa, en la que todas las categorías son necesarias; o bajo una lógica sumativa, en la que cada

categoría puede optimizar los resultados y compensar niveles bajos de las otras. De acuerdo con nuestros resultados, y en línea con otros autores, la mayoría de los estudios utilizan modelos sumativos en sus análisis (Boon et al., 2019). Hallamos también otros enfoques híbridos y, recientemente, algunos autores plantean modelos novedosos, como el modelo del factor limitante (Dasí et al., 2021; Tuuli & van Rhee, 2021), o el concepto de individualmente necesario y conjuntamente suficiente (Hauff et al., 2021; Tuuli & van Rhee, 2021), ambos con escasa presencia en la literatura hasta el momento.

Por otro lado, en los últimos años se ha puesto el foco en el proceso por el cual las prácticas son comunicadas a los empleados (*HRM process*) y no tanto en el contenido, en base a la asunción de que los empleados interpretan el significado de las prácticas en base a sus percepciones individuales (Katou, 2017; Latorre et al., 2016). En este proceso influyen tanto los factores contextuales externos como las características individuales de los empleados, por lo que la variabilidad de percepciones es grande y añade más complejidad a todo el proceso. De acuerdo con nuestros resultados, existe un creciente interés por los resultados a nivel individual, que están estrechamente relacionados con las percepciones de los empleados (Latorre et al., 2016; Nishii et al., 2008; Ollo-López et al., 2016; Van De Voorde et al., 2012). Los empleados perciben a la organización en relación con sus creencias, valores y objetivos individuales o colectivos. Por este motivo, es importante que las organizaciones desarrollen un clima apropiado de trabajo (*HRM Climate*), que mande señales positivas (Heffernan & Dundon, 2016). Algunos autores afirman que existen diversos elementos susceptibles de influir significativamente en las percepciones de los empleados y determinar los niveles de satisfacción, como por ejemplo la estabilidad laboral, las interacciones sociales satisfactorias, el apoyo de la organización, o el contrato psicológico (Latorre et al., 2016). El apoyo organizacional percibido (POS) se refiere a la percepción de los empleados de que la empresa vela por su bienestar, y algunos autores han demostrado, en línea con la teoría del intercambio social (Blau, 1964), que afecta positivamente a la predisposición de alinear su rendimiento con los objetivos de la organización (Morales-Sánchez & Pasamar, 2019). El capital psicológico establece las dinámicas de relación entre los empleados y el empleador, en base a las creencias, percepciones y obligaciones informales mutuas (Rousseau, 1995). Si los empleados perciben que aportan mucho más de lo que reciben a cambio se produce una ruptura del contrato psicológico, lo que puede producir efectos negativos en su comportamiento y rendimiento (Maslach et al., 2001).

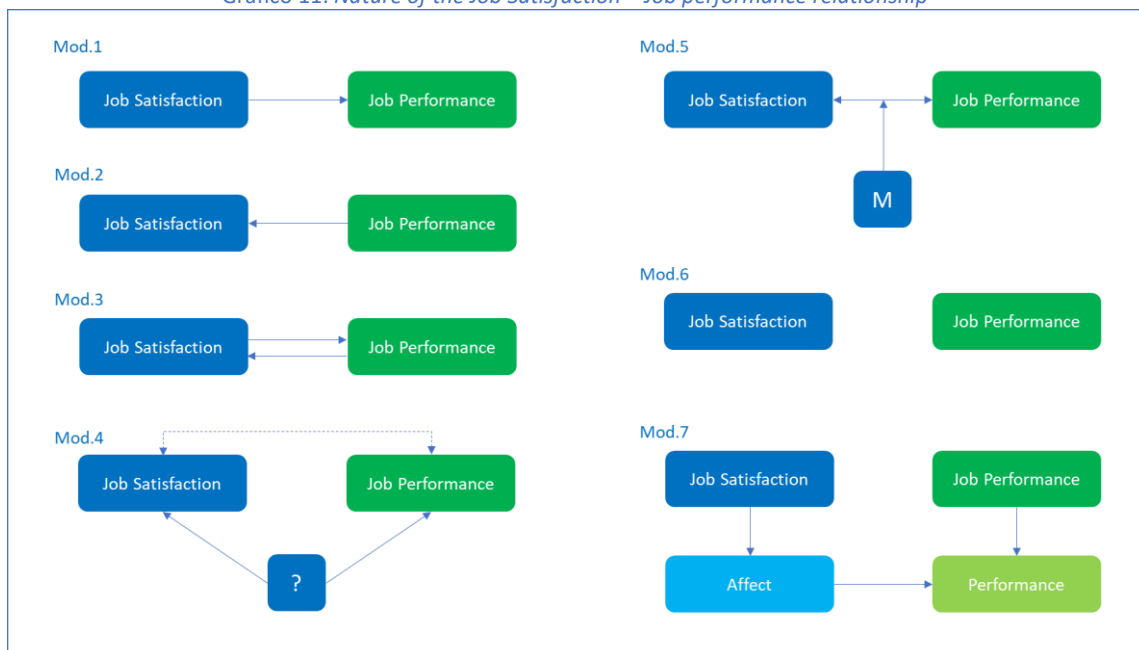
Asimismo, las características personales de los empleados influyen determinantemente en sus percepciones. Dichas características se forman en base a los rasgos de la personalidad, los factores relacionados con el puesto de trabajo, y la interacción entre ambos (Meier & Spector, 2015). De esta manera, no todas las personas se ven igualmente afectadas por las mismas condiciones de trabajo, y la satisfacción y los resultados serán mejores cuando exista una buena concordancia entre la persona y el puesto de trabajo. Los factores laborales son variados, e incluyen características del

puesto de trabajo como la variedad, la importancia de las tareas o el nivel de autonomía; estresores relacionados con la carga de trabajo, los conflictos interpersonales o los límites de la organización; y recursos positivos como el respaldo de la dirección o de los compañeros (Meier & Spector, 2015). La teoría de los rasgos de la personalidad (*Trait theory*) argumenta que cada individuo actúa de manera diferente ante la misma situación (Al Doghan et al., 2019; Long, 1952). El modelo de los cinco grandes rasgos de la personalidad (*Big five factors*) (Goldberg, 1993; Norman, 1963) define los rasgos generales que conforman la personalidad de un individuo: extroversión, cordialidad, estabilidad emocional, responsabilidad y apertura a la experiencia. Este modelo es útil para gestionar el capital humano de la organización, y ayuda a determinar las necesidades individuales de cada empleado. Aunque cada persona es independiente, es posible establecer unas consideraciones generales (Al Doghan et al., 2019; Bozionelos, 2004). Los empleados extrovertidos son habitualmente sociables y asertivos, por lo que favorecen los procesos participativos y el intercambio de información. Los que disponen de elevada estabilidad emocional suelen manejar positivamente las situaciones de estrés y pueden hacerse cargo de tareas de responsabilidad. Los individuos cordiales tienden a crear un buen ambiente de trabajo y son dados a cooperar. Las personas responsables o conscientes son en general organizadas, responsables y poseen el tesón adecuado para el desempeño de las tareas. Finalmente, las personas abiertas a la experiencia suelen ser innovadores, imaginativos y estar dispuestos a asumir nuevas responsabilidades. Por tanto, los elementos que construyen el clima laboral, junto a las características personales de los empleados, determinan las percepciones de éstos últimos (*HRM as experienced*), que son claves para el éxito de los sistemas de gestión de RRHH. Es conveniente resaltar las posibles diferencias entre el concepto de las organizaciones acerca de sus propuestas y lo realmente percibido por los empleados (*actual HRM vs perceived HRM*) (Katou, 2017; Nishii et al., 2008). En esta línea hay autores que sugieren que el éxito de las prácticas depende de las percepciones del empleado, y de su compromiso y disposición a participar y a explorar nuevas metodologías de trabajo (Boselie, 2010; Ollo-López et al., 2009).

Como hemos visto hasta el momento, existen numerosos aspectos que moldean la propia concepción del modelo AMO en cada estudio, y que son diferentes en cada situación particular: la estrategia de la organización; los factores individuales, organizacionales y externos; el contenido del sistema de gestión de recursos humanos, en el que se integra el modelo AMO, y como se comunica a los empleados; el clima laboral y las características personales, que influyen de manera determinante en las percepciones de los empleados y determinan el éxito de los sistemas de gestión. Todos estos elementos influyen en el funcionamiento de la llamada caja negra, que explora la relación entre los sistemas de RRHH y los resultados a distintos niveles. De acuerdo con el planteamiento original del modelo, los sistemas afectan a las actitudes de los empleados, que posteriormente influyen en los resultados organizacionales. En la misma línea, algunos autores sostienen que los resultados individuales ejercen de

mediadores (Boselie, 2010; Boxall & Macky, 2009; D. Guest, 1997). Sin embargo, otros estudios argumentan que no hay evidencias sólidas. Es interesante examinar la revisión cuantitativa y cualitativa que examina la relación entre satisfacción en el trabajo y rendimiento en el trabajo (Judge et al., 2001). Este estudio concluye que se han considerado al menos siete modelos distintos de relación entre ambos conceptos, que resumimos en el gráfico 11. Los modelos 1 y 2 establecen relaciones unidireccionales, mientras que el modelo 3 muestra una relación bidireccional, en el que ambas variables influyen sobre la otra. En ocasiones la relación entre las dos variables está condicionada por una tercera variable no medida (modelo 4), o una variable moderadora (modelo 5). El modelo 6 sostiene que no hay relación, mientras que el modelo 7 argumenta que hay que reconceptualizar los conceptos evaluando, por ejemplo, la satisfacción de modo afectivo en lugar de cognitivo. Los autores sostienen que la metodología más habitual para examinar esta relación es utilizando variables moderadoras como recompensas, características del puesto de trabajo o autoestima, entre otras (mod. 5). Sin embargo, afirman que los resultados previos son inconsistentes debido precisamente a la existencia de muchos modelos que en su mayoría no han sido probados sistemáticamente. Metaanálisis previos sostienen que no existe una relación apreciable entre la satisfacción y el desempeño laboral (correlación = 0.7) (Iaffaldano & Muchinsky, 1985). Sin embargo, cuestionan dicho resultado y proporcionan un metaanálisis actualizado y más completo en el que determinan una correlación mayor (0.30), que es moderada y distinguible de cero. El intervalo de credibilidad entre los estudios considerados es amplio, lo que sugiere la existencia de moderadores, que hacen que establecer conclusiones sólidas acerca del modelo AMO sea, si cabe, más complejo.

Gráfico 11: *Nature of the Job Satisfaction – Job performance relationship*



Fuente: adaptado de Judge et al. (2001)

Finalmente, con respecto a la utilización e influencia de los sistemas de alta implicación en el contexto laboral español, hemos observado diversos aspectos. En base a las fuentes de información con las que hemos trabajado, podemos afirmar que existe poca utilización de incentivos económicos basados en el rendimiento individual o de grupo, quizás motivada por la rigidez de la legislación laboral actual. Estos resultados son acordes a estudios previos (Funcas, 2018). Con respecto a otras prácticas de recursos humanos, en el último artículo observamos que muchos empleados perciben que tienen la capacidad de participar en algunas decisiones relacionadas con sus tareas, que aprenden de sus colaboradores y supervisores, y que emplean herramientas vinculadas a la implicación como el trabajo en equipo o el intercambio de información. Sin embargo, observamos que los modelos evaluados, relacionados con la aplicación formal de los sistemas de alta implicación, no predicen en gran medida la satisfacción laboral de los trabajadores. Esto se debe probablemente a que otros factores intervienen en esta relación. Además, el hecho de que los trabajadores perciban que utilizan algunas prácticas vinculadas a la gestión de los recursos humanos, no indica que existan políticas formales diseñadas a medida, porque en muchas ocasiones dichas prácticas se trabajan de manera informal por la propia idiosincrasia de los puestos de trabajo. No obstante, en el marco del modelo AMO, sí hemos observado, con las limitaciones de nuestros resultados, que la categoría de habilidades, y en menor medida las oportunidades, parecen tener un efecto mayor sobre la satisfacción laboral. La motivación intrínseca, por su parte, tiene un efecto mucho menor.

Algunos estudios evidencian que existen amplias diferencias entre España y otros países de referencia de la UE en relación con la utilización de algunas de las prácticas de alta implicación, lo cual se traduce en menos productividad o satisfacción laboral. Las empresas españolas, por su parte, dedican pocos esfuerzos a subsanar esta situación. Por tanto, la situación de la gestión de recursos humanos en España tiene un amplio margen de mejora (Bayo Moriones & Ortín Angel, 2012). Con respecto a la tipología de prácticas, España está más cerca de los países de referencia en las prácticas relacionadas con el diseño del puesto de trabajo, y en las destinadas a fomentar la implicación del trabajador, como la autonomía, el trabajo en equipo o la rotación. En cambio, hay un amplio recorrido de mejora con relación a la seguridad en el empleo, la formación en el trabajo, la promoción interna y los incentivos económicos (Funcas, 2018). Un factor importante para explicar estos resultados es el déficit de formación de España en los segmentos intermedios, en comparación con los países de referencia (Bayo Moriones & Ortín Angel, 2012). Esto se traduce en un déficit de capital humano que dificulta la participación en la toma de decisiones, ya que esta es posible únicamente cuando los empleados poseen los conocimientos y motivación adecuados. Por tanto, el nivel de autonomía es menor y los directivos dedican más tiempo a la supervisión que a tomar decisiones estratégicas. Los puestos directivos, por su parte, no se ocupan con los empleados de mayor cualificación en muchas ocasiones. Otro factor importante es la elevada regulación laboral, que se traduce en falta de flexibilidad interna del mercado

laboral, en comparación con otros países. La flexibilidad del mercado español se basa en una tasa de contratos temporales, que dificultan la aparición de relaciones laborales sólidas y satisfactorias. (Bayo Moriones & Ortín Angel, 2012). Finalmente, existen barreras institucionales y culturales que ralentizan la incorporación de los sistemas de alta implicación, como la profesionalidad en la gestión, la cooperación entre trabajadores y empresa y los rasgos culturales propios (Funcas, 2018; Hofstede, 1991).

## 2. Contribuciones, limitaciones e investigación futura

La presente tesis ofrece contribuciones a nivel académico y profesional. En primer lugar, hemos realizado una síntesis de la evidencia previa con relación al modelo AMO a través de un examen exhaustivo de la literatura relacionada. De este modo, hemos determinado las características del modelo, sus implicaciones a nivel teórico y práctico, sus aspectos positivos, y su validez para determinar la relación entre los sistemas de alta implicación y los resultados. Asimismo, hemos señalado aspectos que dificultan la generalización de los resultados, como la gran variedad de enfoques metodológicos y fuentes de información, o la influencia de numerosos factores externos al modelo que influyen de manera determinante en su funcionamiento. El conocimiento profundo del modelo permite orientar de manera efectiva el enfoque de las sucesivas investigaciones. En este sentido, consideramos que sería conveniente una mayor consistencia en los estudios, replicando el mismo análisis en diferentes contextos para extraer conclusiones más precisas que contribuyan al conocimiento científico. En segundo lugar, hemos analizado el grado de utilización de los sistemas de recursos humanos en el contexto español, detallando los factores que pueden influir en su implementación. Nuestros resultados y conclusiones pueden fomentar el desarrollo de sistemas de gestión de recursos humanos destinados a incrementar la productividad, competitividad y satisfacción laboral. Finalmente, hemos identificado los distintos enfoques del modelo AMO acerca de cómo combinar las prácticas existentes en la literatura. Además, hemos evaluado la validez de los enfoques sumativo y multiplicativo para predecir la relación entre las prácticas de alta implicación y la satisfacción laboral. Nuestras conclusiones demuestran la conveniencia de explorar enfoques distintos al aditivo en futuras investigaciones para confirmar las sinergias atribuidas a los sistemas de alta implicación.

Nuestra investigación no está exenta de limitaciones. En primer lugar, hemos utilizado únicamente fuentes de información secundaria que, si bien proporcionan una muestra representativa y poco sesgada, no permiten intervenir en el diseño de los cuestionarios y limitan las posibilidades del estudio. Una línea de investigación futura sería utilizar fuentes de información diferentes para observar si los resultados son similares con diferentes muestras. Al respecto, existen algunas encuestas europeas relacionadas con la investigación que podrían utilizarse, como la Encuesta Europea de Condiciones de Trabajo (EWCS), o la Encuesta Europea de Empresas (ECS). En segundo lugar, hemos

restringido los análisis al contexto laboral español. Dado que las bases de datos utilizadas contienen datos de otros países, o se corresponden con bases de datos similares europeas, otra línea de investigación futura sería establecer una comparativa con otros países para observar las diferencias en relación con el uso y la implantación de los sistemas de recursos humanos y determinar la posición de España con relación a los países de referencia. En tercer lugar, hemos evaluado la satisfacción laboral en base a percepciones individuales y utilizando prácticas de RRHH, variables de control y variables de moderadoras específicas. Sin embargo, existen otras combinaciones que podrían contribuir al conocimiento del modelo. En este sentido, la investigación futura podría explorar otros indicadores individuales, como el compromiso con la organización, la cooperación, el carácter innovador, el absentismo o la intención de abandonar la organización. Por otro lado, sería interesante considerar el clima laboral o las características personales de los empleados en los análisis, ya que influyen de manera determinante en sus percepciones. En cuarto lugar, hemos evaluado el modelo multiplicativo con interacciones dobles y el sumativo, aunque existen otras propuestas en la literatura que, aunque tienen poca presencia, son interesantes. Otra línea de investigación sería incluir en los análisis enfoques diferentes como por ejemplo el modelo del factor limitante o el concepto de individualmente necesario y conjuntamente suficiente, para evaluar si predicen mejor la relación entre los sistemas de RRHH y los resultados. Para explorar estos modelos sería conveniente la utilización de herramientas estadísticas distintas a las empleadas en nuestra investigación, como por ejemplo el análisis de condiciones necesarias (NCA). En quinto lugar, no disponemos de datos que nos permitan realizar un estudio longitudinal, por lo que en el futuro sería interesante recopilar datos para desarrollar este tipo de estudio a fin de apreciar los efectos causales de la implantación de sistemas de alta implicación al cabo de un periodo de tiempo. Finalmente, aunque hemos resumido en un modelo amplio muchas de las relaciones que influyen en el modelo AMO, existen otras vías distintas para explicar la mejora de los resultados. En el futuro sería interesante explorar la parte emocional y la cognitiva de los procedimientos participativos (Marín-García & De Miguel, 2001). De acuerdo con los modelos afectivos, la participación mejora los canales de comunicación, lo que permite satisfacer las necesidades personales, aumentar la confianza y mejorar el clima laboral, produciendo un aumento de la satisfacción. Los modelos cognitivos afirman que la participación mejora la calidad de las decisiones, debido a que se comparte y se utiliza mejor la información, y se resuelven los problemas de manera eficiente al contar con puntos de vista diferentes, lo que permite además desarrollar la capacidad y la confianza de los empleados.



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## ANEXOS



Anexo A: Información por artículo. 1ª Revisión (1993-2016)

Article	Objectives	AMO test?	AMO Model	Study	Year	Country	Sample	Hypothesis (Related to AMO framework)	Measures of Organizational Performance	Ability-enhancing practices	Motivation-enhancing practices	Opportunity-enhancing practices	Control variables	Results
Alagaraja, M. (2012). HRD and HRM Perspectives on Organizational Performance: A Review of Literature.	Developing a pluralistic approach in treating HRD and HRM perspectives as complementary, to provide an enriched understanding of HR. Examining the link between OP and HRD/M	NO	N/A	Literature review	2012	USA	248 articles	N/A	<ul style="list-style-type: none"> <li>Productivity</li> <li>Organization performance</li> <li>Market performance</li> <li>Organizational turnover</li> <li>Financial performance</li> <li>Profitability</li> <li>Quality</li> <li>Turnover intention</li> <li>Strength of HR orientation</li> <li>Learning organization characteristics</li> </ul>	N/A	N/A	N/A	N/A	Greater integration of HRD and HRM theoretical perspectives would significantly improve the role, status, and influence of HR i function on OP.
An, Y. (2009). The enterprise high-performance work system and its enlightenment to enterprises of our country.	To Propose a perfect HPWS model with self-directed work teams (SDWT)	NO	Undetermined $P = f(A, M, O)$	Theoretical model	2009	China	N/A	N/A	<ul style="list-style-type: none"> <li>Enhancement of competitive capabilities</li> </ul>	<ul style="list-style-type: none"> <li>Training</li> <li>Performance evaluation</li> </ul>	<ul style="list-style-type: none"> <li>Effective Incentives</li> <li>Sharing information about Performance</li> <li>Enterprise Culture (Respect and Trust)</li> </ul>	<ul style="list-style-type: none"> <li>Self-Directed Work Teams (SDWT)</li> <li>Fellowship Collaboration (information sharing and acquisition)</li> </ul>	N/A	N/A
Armstrong et al., (2010). The Impact of diversity and equality management on firm performance: Beyond high performance work systems.	To demonstrate that a diversity and equality management system (DEMS) contributes to firm performance beyond the effects of a traditional high-performance work system (HPWS)	YES	Summative $P = f(A + M + O)$	Survey Cross-sectional Multilevel Quantitative	2006	Ireland	132 companies	<p><b>H1:</b> Increased use of HPWS results in increased labour productivity, increased workforce innovation, and decreased voluntary employee turnover.</p> <p><b>H2:</b> Increased use of diversity/equality management systems results in increased labour productivity, workforce innovation, and decreased voluntary employee turnover, over and above the contribution of HPWS.</p>	<ul style="list-style-type: none"> <li>Labour productivity</li> <li>Workforce innovation</li> <li>Employee turnover rates</li> </ul>	<ul style="list-style-type: none"> <li>Non-discriminatory recruiting</li> <li>Training and development</li> </ul>	<ul style="list-style-type: none"> <li>Meaningful work</li> <li>Sense of workplace justice</li> <li>Performance appraisal</li> <li>Performance feedback</li> <li>Group performance compensation</li> </ul>	<ul style="list-style-type: none"> <li>employee involvement practices (quality circles, problem-solving, self-directed work teams)</li> <li>Strategic information sharing (operating, financial, performance)</li> </ul>	<ul style="list-style-type: none"> <li>Firm age</li> <li>Firme size</li> <li>R&amp;D investment in proportion to sales</li> <li>Unionization</li> <li>Product differentiation strategy</li> <li>Country of ownership</li> <li>Industry sector</li> </ul>	Hypothesis 1: Supported Hypothesis 2: supported
Bainbridge, H. (2015). Devolving people management to the line.	Develop a model to test and describe how the rationale for devolving people management to the line influences the HR function, HR's interactions with line managers and the quality of people management	YES	Summative $P = f(A + M + O)$	Survey Cross-sectional Multilevel	2015	Australia	446 managers	<p><b>H5.</b> Line manager focused HR practices are positively related to: (a) HR function business partner orientation and (b) people management effectiveness.</p>	<ul style="list-style-type: none"> <li>People management effectiveness</li> <li>HR function business partner orientation</li> </ul>	<ul style="list-style-type: none"> <li>Extensive training in people management skills</li> </ul>	<ul style="list-style-type: none"> <li>Recognition and reward for management activities involvement.</li> </ul>	<ul style="list-style-type: none"> <li>Job descriptions explicitly include management activities</li> </ul>	<ul style="list-style-type: none"> <li>Respondent background</li> <li>Position level</li> <li>Organizational size</li> <li>Industrial groupings</li> </ul>	Hypothesis 5: Supported
Bal, P. M., & De Lange, A. H. (2015). From flexibility human resource management to employee engagement and perceived job performance across the lifespan: A multisample study.	To investigate the effects of flexibility human resource management (HRM) on employee outcomes over time, as well as the role of age in these relations.	YES	Undetermined $P = f(A, M, O)$	Survey Cross-sectional Multilevel Longitudinal (2 studies)	1: 2007-2008 2: 2009-2010	1: USA 2: 11 countries	1: 695 respondents 2: 2158 respondents	<p><b>H1:</b> Availability of Flexibility HRM is positively related to employee engagement.</p> <p><b>H2:</b> Use of Flexibility HRM is positively related to employee engagement.</p> <p><b>H3:</b> Employee engagement partially mediates the relations between availability of flexibility HRM and job performance.</p> <p><b>H4:</b> Employee engagement partially mediates the relations between use of flexibility HRM and job performance.</p>	<ul style="list-style-type: none"> <li>Employee Engagement</li> <li>Perceived job performance</li> </ul>	N/A	N/A	<ul style="list-style-type: none"> <li>Irregular flexibility HRM</li> <li>Regular flexibility HRM</li> </ul>	<ul style="list-style-type: none"> <li>Age</li> <li>Gender</li> <li>Education level</li> <li>Organization tenure</li> <li>Weekly working hours</li> <li>Work status (full/partial time)</li> </ul>	<p><b>STUDY 1:</b> Hypothesis 1: Supported Hypothesis 2: Rejected Hypothesis 3: Supported Hypothesis 4: Rejected</p> <p><b>STUDY 2:</b> Hypothesis 1: Supported Hypothesis 2: Rejected Hypothesis 3: Supported Hypothesis 4: Rejected</p>

Bello-Pintado, A. (2015). Bundles of HRM practices and performance: empirical evidence from a Latin American context.	To develop a theoretical reasoning and offering new empirical evidence to explain how interactions between bundles of internally aligned HRM practices affect manufacturing performance outcomes	YES	<p><i>multiplicative</i>  <math>P = f(A \times M \times O)</math></p> <p><i>multiplicative</i>  <math>P = f(M \times A)</math></p> <p><i>multiplicative</i>  <math>P = f(M \times O)</math></p> <p><i>multiplicative</i>  <math>P = f(A \times O)</math></p>	Personal interviews with plant managers Cross-sectional	2009	Uruguay	150 firms	<p><b>H1:</b> There is a stronger positive association between bundles of motivation and manufacturing performance (MP)</p> <p><b>H2a:</b> There is a synergistic relationship between the motivation and the ability bundles to explain averaged MP</p> <p><b>H2b:</b> The synergistic relationship between the motivation and the ability bundles is more strongly associated with enhanced cost and quality performance than with time-based performance.</p> <p><b>H3:</b> There is a synergistic relationship between the motivation and the opportunity bundles to explain MP measures</p> <p><b>H4a:</b> There is a synergistic relationship between the ability and the opportunity bundles to explain MP measures</p> <p><b>H4b:</b> The synergistic relationship between the ability and the opportunity bundles is more strongly associated with enhanced time-based performance than with cost and quality performance.</p> <p><b>H5:</b> There is a synergistic relationship among the three bundles of practices to explain MP</p>	<ul style="list-style-type: none"> <li>Operational performance (mean of 9-performance index: efficiency, delivery, return, QPP, QPP, new product develop time, number of new products developed), preparation time, speed</li> </ul>	<ul style="list-style-type: none"> <li>Selection techniques</li> <li>Selection criteria</li> <li>Extensive training</li> </ul>	<ul style="list-style-type: none"> <li>Job security</li> <li>Internal promotion</li> <li>High-performance compensation</li> <li>Formal performance evaluation</li> </ul>	<ul style="list-style-type: none"> <li>Job autonomy</li> <li>Information sharing</li> <li>Employee participation</li> </ul>	<ul style="list-style-type: none"> <li>Size of the plant (Number of workers)</li> <li>Technology intensity of the sector</li> </ul>	<p>Hypothesis 1: Supported</p> <p>H2a: Supported</p> <p>H2b: Supported</p> <p>Hypothesis 3: Supported</p> <p>H4a: Partial support</p> <p>H4b: Partial support</p> <p>Hypothesis 5: Rejected</p>
Block, J., & Pickl, S. (2014). The Mystery of Job Performance: A System Dynamics Model of Human Behaviour. The Black-Box of HRM.	To build a system dynamics model to investigate how HRM policies and practices impact of an employee performance	YES	<p><i>multiplicative</i>  <math>P = f(A \times M \times O)</math></p>	System dynamics model <b>Longitudinal</b>	2014	Germany	Real world data & simulated data	N/A	<ul style="list-style-type: none"> <li>Performance of an individual</li> </ul>	<ul style="list-style-type: none"> <li>Learning</li> <li>Training</li> <li>Experiences in the current job</li> </ul>	<ul style="list-style-type: none"> <li>Compensation</li> <li>Incentives</li> <li>Salary in relation to what is paid in other organizations</li> <li>Extrinsic rewards (money, status)</li> <li>Intrinsic motivation</li> </ul>	<ul style="list-style-type: none"> <li>Design of the workplace</li> <li>Favourable working conditions</li> <li>Supportive work rules</li> <li>Helpful co-workers</li> <li>Sufficient information</li> </ul>	<ul style="list-style-type: none"> <li>Changes in the work environment</li> <li>Health (physical and psychological state of the person)</li> <li>Age</li> <li>Level of workload</li> <li>Job expectations</li> </ul>	<p>For maximum success, it is necessary to adjust the HRM policy according to the actual performance trend.</p> <p>A singular managerial intervention is only of short-term success and not sufficient for a sustainable HRM policy. It seems to be essential to adequately consider all three human resource (HR) policy domains (KSA; Motivation, opportunities)</p>
Boon et al., (2014). Perceived Human Resource Management Practices: Their Effect on Employee Absenteeism and Time Allocation at Work.	To study the relationship between perceptions of HRM and time allocation at work (task activities versus contextual activities).	YES	<p><i>Summative</i>  <math>P = f(A + M + O)</math></p>	Survey Multilevel Large governmental organization	2014	NL	1626 employees	<p><b>H4:</b> Employee perceptions of the (a) people flow, (b) appraisal and reward, and (c) employment relation bundle, are indirectly related to absence via job satisfaction.</p> <p><b>H5:</b> Employee perceptions of the (a) people flow and (b) employment relation bundle are indirectly related to their time spent on task activities and contextual activities via employees' extra effort.</p> <p><b>H6:</b> Employee perceptions of the (a) people flow, (b) appraisal and reward, and (c) employment relation bundle are indirectly related to time spent on task activities and contextual activities via job satisfaction and employees' extra effort.</p>	<ul style="list-style-type: none"> <li>Job satisfaction</li> <li>Extra effort</li> <li>Time spent on contextual activities</li> </ul>	<ul style="list-style-type: none"> <li>Employees perceptions of their training and development options in the organization</li> </ul>	<ul style="list-style-type: none"> <li>Appraisal</li> <li>Reward</li> <li>Work-life balance</li> </ul>	<ul style="list-style-type: none"> <li>Job design</li> <li>Teamwork</li> </ul>	<ul style="list-style-type: none"> <li>Age</li> <li>Gender</li> <li>Tenure</li> <li>Work hours (part time job, full time job)</li> </ul>	<p>H4: Supported</p> <p>H5a: not supported</p> <p>H5b: Supported</p> <p>H6: Supported</p>
Boselie, P. (2010). High performance work practices in the health care sector: a Dutch case study.	To present an empirical study of the effect of high-performance work practices on commitment and citizenship behaviour in the health care sector. The theory suggests that individual employees are willing "to go the extra mile" when they are given the opportunity to develop their abilities and to participate, and when they are motivated.	YES	<p><i>Summative</i>  <math>P = f(A + M + O)</math></p>	Questionnaire Case study Cross sectional Multilevel	2010	NL	157 respondents	<p><b>H1a.</b> High scores on perceived HPWPs that enhance Abilities are positively related to high affective commitment (AC)</p> <p><b>H1b.</b> High scores on perceived HPWPs that enhance Motivation are positively related to high AC.</p> <p><b>H1c.</b> High scores on perceived HPWPs that enhance Opportunities to participate are positively related to high AC.</p> <p><b>H2a.</b> High scores on perceived HPWPs that enhance abilities are positively related to high levels of organisational citizenship behaviour (OCB).</p> <p><b>H2b.</b> High scores on perceived HPWPs that enhance motivation are positively related to high levels of OCB.</p> <p><b>H2c.</b> High scores on perceived HPWPs that enhance opportunities to participate are positively related to high levels of OCB.</p>	<ul style="list-style-type: none"> <li>Affective commitment</li> <li>Organisational citizenship behaviour</li> </ul>	<ul style="list-style-type: none"> <li>Perceived opportunities for skills training</li> <li>General training</li> <li>Personal development</li> <li>Coaching</li> <li>Task variety</li> </ul>	<ul style="list-style-type: none"> <li>High wages</li> <li>Fair pay</li> <li>Pay for performance.</li> </ul>	<ul style="list-style-type: none"> <li>Employee influence</li> <li>Involvement in decision making</li> <li>Job autonomy</li> </ul>	<ul style="list-style-type: none"> <li>Gender</li> <li>Age</li> <li>Educational level</li> <li>Company tenure</li> <li>Average number of working hours per week.</li> </ul>	<p>H1a: Supported</p> <p>H2c: Supported</p> <p>H1b: Rejected</p> <p>H1c: Rejected</p> <p>H2a: Rejected</p> <p>H2b: Rejected</p>



Boselie et al., (2005). Commonalities and contradictions in HRM and performance research.	To present an overview of what the authors believe to be every empirical research article into the linkages between HRM and performance published in pre-eminent international refereed journals between 1994 and 2003. The article examines how each study depicts the so-called 'black box' stage between HRM and performance	NO	N/A	Literature review Descriptive study Cross-sectional Multilevel	1994-2003	NL	104 major studies of the HRM-P relationship	N/A	<ul style="list-style-type: none"> <li>Financial measures</li> <li>Organisational measures (quality, productivity)</li> <li>Behavioural HR Outcomes (turnover, absence)</li> <li>Attitudinal HR Outcomes (trust, commitment, motivation, satisfaction, OCB)</li> </ul>	<ul style="list-style-type: none"> <li>Training and development</li> <li>Recruitment and selection</li> <li>Attitude survey</li> <li>Professionalisation and effectiveness of the HR function</li> <li>Performance management (appraisal)</li> </ul>	<ul style="list-style-type: none"> <li>Contingency pay and rewards</li> <li>Good wages (fair pay, above market rate remuneration)</li> <li>Internal promotion opportunities and labour market</li> <li>Employment security</li> <li>Benefits packages</li> <li>Financial participation</li> <li>Social activities</li> <li>Work-life balance</li> </ul>	<ul style="list-style-type: none"> <li>Team working and collaboration</li> <li>Direct participation</li> <li>Communication and information sharing</li> <li>Autonomy and decentralized decision-making</li> <li>HR planning</li> <li>Symbolic egalitarianism</li> <li>Job analysis</li> <li>Indirect participation</li> <li>Diversity and equal opportunities</li> <li>Formal procedures</li> <li>Family-friendly policies</li> <li>Social responsibility practices</li> <li>Job design</li> </ul>	<ul style="list-style-type: none"> <li>Sector-level controls (market conditions, technology)</li> <li>Organisation-level controls (size, firm age, industry, capital intensity)</li> <li>Individual level controls (age, gender, level of education)</li> </ul>	N/A
Bos-Nehles et al., (2013). Employee perceptions of line management performance: Applying the AMO theory to explain the effectiveness of line managers' HRM implementation.	Based on the Ability-Motivation-Opportunity (AMO) theory, we predict that line managers' performance in this regard will depend on their ability to apply HRM practices, and that their motivation and the opportunity provided will enhance this effect.	YES	Combinative $P = f(A, M, O)$	Firm level Survey Employee level survey Cross-sectional Multilevel	2013	NL	174 Line-managers 1065 employees	<p>H1: The greater the ability of line managers in terms of performing HRM practices, the more effectively they will implement these practices on the work floor.</p> <p>H2: The motivation to implement HRM practices effectively moderates the relationship between line managers' ability and their HRM implementation effectiveness.</p> <p>H3: The opportunity provided to implement HR practices moderates the relationship between line managers' ability to implement and their HR implementation effectiveness.</p>	<ul style="list-style-type: none"> <li>Implementation effectiveness (on the employees' perceptions of a line manager's effectiveness in implementing HRM practices)</li> </ul>	<ul style="list-style-type: none"> <li>HRM related competencies</li> </ul>	<ul style="list-style-type: none"> <li>Desire (willingness to perform tasks and responsibilities)</li> </ul>	<ul style="list-style-type: none"> <li>Capacity</li> <li>Support from HR professionals</li> <li>Policy and procedures</li> <li>HRM implementation effectiveness</li> </ul>	<ul style="list-style-type: none"> <li>Organizational context</li> <li>Experience as line manager</li> <li>Educational level</li> </ul>	H1: Supported H2: Rejected H3: Partially Supported
Choi, J. H. (2014). The HR-performance link using two differently measured HR practices.	To demonstrate the relationships between three aspects of HPWS (A, M, O) and firm performance (financial performance and job satisfaction). In addition, this study compares the relative predictive power of two measures of HR practices (the perceived presence and the perceived effectiveness).	YES	Summative $P = f(A + M + O)$	Firm level Survey Employee level survey Cross sectional Multilevel	2005	Korea	361 firms (firm level survey) 11911 employees (employee level survey)	<p>H1: There is a positive association between the presence of firms' HR practices (HR-P) and financial performance in the subsequent year</p> <p>H2: There is a positive association between the perceived effectiveness of firms' HR practices (HR-E) and financial performance in the subsequent year.</p> <p>H3: There is a positive association between the presence of firms' HR practices (HR-P) and employee satisfaction.</p> <p>H4: There is a positive association between the perceived effectiveness of firms' HR practices (HR-E) and employee satisfaction.</p>	<ul style="list-style-type: none"> <li>Firm performance (return on assets)</li> <li>Employee job satisfaction</li> </ul>	<ul style="list-style-type: none"> <li>Formal training</li> <li>On-the-job training</li> <li>Career development plans</li> <li>Performance appraisal feedback</li> </ul>	<ul style="list-style-type: none"> <li>Pay-for-performance</li> <li>Individual incentive programs</li> <li>Corporate incentive programs</li> </ul>	<ul style="list-style-type: none"> <li>Project teams</li> <li>Quality circles</li> <li>Suggestion systems</li> <li>Information sharing</li> <li>Job rotation</li> </ul>	<ul style="list-style-type: none"> <li>Firm performance level: presence of unions, firm size, and age</li> <li>Employee job satisfaction level: Age, sex, Marital status, education level, monthly wage</li> </ul>	H1: Partially Supported H2: Partially Supported H3: Supported H4: Supported
Choi, M., & Yoon, H. J. (2015). Training investment and organizational outcomes: a moderated mediation model of employee outcomes and strategic orientation of the HR function.	To investigate how and when investment in employee training leads to improved organizational outcomes.	YES	Summative $P = f(A + M + O)$	Longitudinal Cross-sectional Multilevel Survey	2005 2007 2009	Korea	277 firms	<p>H5: The mediated effect of training investment on organizational outcomes [(a) operational performance, (b) financial performance] via employee commitment will be stronger when the HR function's strategic orientation is higher.</p> <p>H6: The mediated effect of training investment on organizational outcomes [(a) operational performance, (b) financial performance] via employee competence will be stronger when the HR function's strategic orientation is higher.</p>	<ul style="list-style-type: none"> <li>Operational performance</li> <li>Financial performance (Return on assets)</li> </ul>	<ul style="list-style-type: none"> <li>Training investment</li> </ul>	N/A	<ul style="list-style-type: none"> <li>HR function strategic orientation</li> </ul>	<ul style="list-style-type: none"> <li>Organization age</li> <li>Organization size</li> <li>Capital intensity</li> <li>Past financial performance (ROA)</li> </ul>	H5a: Supported H5b: Supported H3: Not Supported H4: Not Supported
Claudia, A. C. (2015). HRM - Well-Being at Work Relation. A Case Study.	To explore the HRM-well-being at work relation considering contextual factors that may influence this link: HR principles, HR function position and role in the organisation (internal factors) and labour market, business competition, economic factors (external factors)	NO	N/A	Interview Case study Questionnaire	2015	Romania	31 respondents	N/A	<ul style="list-style-type: none"> <li>Employee well being</li> </ul>	<ul style="list-style-type: none"> <li>Development possibilities</li> <li>Performance evaluation</li> <li>Induction period</li> <li>Quality internal trainings</li> </ul>	<ul style="list-style-type: none"> <li>Free meals for employees</li> <li>Empowerment (recognition)</li> </ul>	<ul style="list-style-type: none"> <li>flexible work programme</li> </ul>	<ul style="list-style-type: none"> <li>N/A</li> </ul>	It is important to analyse the context (internal and external). The context may be an explanation on why some research found a positive relation, some negative ones and some no connection between HRM and well-being at work.

Demortier et al., (2014). Opening the Black Box of HR Practices - Performance Relationship: Testing a Three Pathways Amo Model.	To empirically investigate the theoretical AMO model and test the sequential mediating effects of business unit-level employees' AMO characteristics and collective human capital in the relationship between HR practices and business unit performance.	YES	Summative $P = f(A + M + O)$	Multilevel Cross-sectional Survey Longitudinal	2012	Luxembourg	46 managers 341 employees Knowledge-based firms	<b>H1:</b> Group-level professional expertise and collective human capital will sequentially mediate the relationship between skill-enhancing HR practices and business-unit performance. <b>H2:</b> Group-level corporate sense and collective human capital will sequentially mediate the positive relationship between motivation-enhancing HR practices and business-unit performance. <b>H3:</b> Group-level entrepreneurial mindset and collective human capital will sequentially mediate the positive relationship between empowerment-fostering HR practices and business-unit performance.	<ul style="list-style-type: none"> <li>Business-unit performance</li> </ul>	<ul style="list-style-type: none"> <li>Individual level measures: training programs, job experience, professional expertise</li> </ul>	<ul style="list-style-type: none"> <li>Individual level measures: Group bonuses, group-performance outcomes. Corporate sense</li> </ul>	<ul style="list-style-type: none"> <li>Individual level measures: Empowerment, group decisions. Entrepreneurial mindset</li> </ul>	<ul style="list-style-type: none"> <li>Average tenure in the business unit</li> <li>Average number of training years.</li> </ul>	H1: Supported H2: Not Supported H3: Not Supported
Drummond, I., & Stone, J. (2007). Exploring the potential of high-performance work systems in SMEs.	To explore aspects of employee relations in firms in, focusing on the use of HPWS and the way they impact upon performance in these businesses.	NO	N/A	Deep study Interview Cross-sectional Multilevel	2004	UK	30 SMEs companies	N/A	<ul style="list-style-type: none"> <li>Successful in absolute and relative terms (business success, sale growth, employment growth, creation of an enjoyable work environment)</li> </ul>	<ul style="list-style-type: none"> <li>Structured induction training</li> <li>Employee training</li> <li>Annual appraisal</li> <li>Feedback on job performance</li> <li>Skill development</li> </ul>	<ul style="list-style-type: none"> <li>Engagement and commitment</li> <li>Staff retention through intrinsic motivation</li> <li>Appropriate leadership</li> </ul>	<ul style="list-style-type: none"> <li>Information on organization performance and strategy</li> <li>Flexibility and creativity</li> <li>Customer need orientation</li> <li>Teamwork</li> <li>Flat hierarchy</li> <li>Autonomy</li> <li>Communication</li> </ul>	<ul style="list-style-type: none"> <li>Internal context</li> <li>Core values</li> <li>Firm philosophy</li> <li>Organizational culture</li> </ul>	The analysis suggests that the common explanation for enhanced business performance in terms of HPWS is a valid but partial. The bundles employed in these businesses are synergistic, but the enhanced outcomes produced need to be understood in terms of the system as a whole, not just the concrete practices
Ehrnrooth, M., & Björkman, I. (2012). An Integrative HRM Process Theorization: Beyond Signalling Effects and Mutual Gains.	To develop and test an integrative HRM process theorization positing the existence of mutually reinforcing AMO, signalling, and identity-based control mechanisms of the influence of HRM on both employee performance and work intensification	YES	Summative $P = f(A + M + O)$	Questionnaire	2012	Sweden & Finland	112 Consulting companies	<b>Hypothesis 1a:</b> The HRM process (intensity, relevance, and validity) is positively related to employees' creativity. <b>Hypothesis 1b:</b> The HRM process (intensity, relevance, and validity) is positively related to employees' core job performance. <b>Hypothesis 2:</b> The HRM process (intensity, relevance, and validity) is positively related to the level of workload.	<ul style="list-style-type: none"> <li>Creativity</li> <li>Workload</li> <li>Core job performance</li> </ul>	<ul style="list-style-type: none"> <li>Selection</li> <li>Performance appraisal</li> <li>Training and development</li> </ul>	<ul style="list-style-type: none"> <li>Compensation</li> </ul>	<ul style="list-style-type: none"> <li>Socialization</li> <li>Communication</li> <li>Autonomy</li> <li>Involvement</li> </ul>	<ul style="list-style-type: none"> <li>Gender</li> <li>Age</li> <li>Tenure</li> <li>Workload</li> <li>Psychological empowerment</li> </ul>	H1a: Supported H1b: Supported H2: Supported
Fu et al., (2013). Exploring the performance effect of HPWS on professional service supply chain management	To better understand service supply chain management by analysing the professional service supply chain in professional service firms (PSFs) and exploring how the HPWS influence professional service supply chain performance	YES	Undetermined $P = f(A, M, O)$	Survey Cross-sectional Multilevel	2010	Ireland	120 accounting firms	<b>H1:</b> Utilization of HPWS is positively associated with PSSC performance. <b>H2:</b> Team formation and utilization will mediate the relationship between HPWS and the PSSC performance. <b>H3:</b> The PSSC performance is positively associated with overall organizational performance.	<ul style="list-style-type: none"> <li>Professional service supply chain (PSSC) Performance</li> <li>Overall organizational performance</li> </ul>	<ul style="list-style-type: none"> <li>Employment test</li> <li>Formal job analysis</li> <li>Internal promotion</li> <li>Individual performance appraisal</li> <li>Continuous training and professional development</li> <li>Structured mentoring</li> </ul>	<ul style="list-style-type: none"> <li>Incentive plans</li> <li>Profit-sharing plans</li> <li>Gain-sharing plans</li> <li>Pay for performance</li> <li>Above market wage levels</li> </ul>	<ul style="list-style-type: none"> <li>Team formation and utilization</li> <li>Formal information sharing program</li> <li>Attitude surveys</li> <li>Quality of work life programs</li> <li>Quality circles</li> <li>Participation teams</li> <li>Self-directed work teams</li> </ul>	<ul style="list-style-type: none"> <li>Gender</li> <li>Age</li> <li>Education</li> <li>Tenure in the present organization</li> <li>Tenure in accounting</li> <li>Full time work experience</li> </ul>	Hypothesis 1: Supported Hypothesis 2: Supported Hypothesis 3: Supported
Ganli et al., (2014). Pak. J. Statist. 2014 Vol. 30 (5), 911-922 Effect of High-performance work system on organizational citizenship behaviours from China	To explore the impact of HPWS to organizational citizenship behaviours (OCBs), which include the job satisfaction, organization commitment, and psychological empowerment	YES	Summative $P = f(A + M + O)$	Questionnaire Multilevel	2014	China	297 employees	<b>H1:</b> The HPWS for new generation employees (NGE) will be positively associated with job satisfaction (JS) <b>H1a:</b> The ability practices of HPWS for NGE will be positively associated with JS <b>H1b:</b> The motivation practices of HPWS for NGE will be positively associated with JS <b>H1c:</b> The opportunity practices of HPWS for NGE will be positively associated with JS <b>H2:</b> The HPWS for NGE will positively associate with organization commitment (OC) <b>H2a:</b> The ability practices of HPWS for NGE will positively associate with OC. <b>H2b:</b> The motivation practices of HPWS for NGE will positively associate with OC. <b>H2c:</b> The opportunity practices of HPWS for NGE will positively associate with OC. <b>H3:</b> The HPWS for NGE will positively associate with psychological empowerment <b>H3a:</b> The ability practices of HPWS for NGE will be positively associated with PE. <b>H3b:</b> The motivation practices of HPWS for NGE will be positively associated with PE. <b>H3c:</b> The opportunity practices of HPWS for NGE will be positively associated with PE.	<ul style="list-style-type: none"> <li>Job satisfaction (both economic and non-economic factors)</li> <li>Organizational commitment</li> <li>Psychological Empowerment</li> </ul>	<ul style="list-style-type: none"> <li>Employment interviews</li> <li>Formal training</li> <li>Long-term development</li> </ul>	<ul style="list-style-type: none"> <li>Performance appraisal</li> <li>Individual bonuses</li> <li>Group bonuses</li> <li>Merit-based promotion opportunities</li> </ul>	<ul style="list-style-type: none"> <li>Information sharing</li> <li>Formal participation processes</li> <li>Fair complaint procedures</li> <li>Employee autonomy on job design modifications</li> </ul>	<ul style="list-style-type: none"> <li>Position</li> <li>Gender</li> <li>Level of education</li> </ul>	H1: Supported H1a: No evidence H1b: Supported H1c: Supported H2: Supported H2a: Supported H2b: Supported H2c: Supported H3: Supported H3a: No evidence H3b: No evidence H3c: Supported

Gilbert et al., (2015). Strong HRM processes and line managers' effective HRM implementation: A balanced view.	To investigate whether strong HRM processes contribute positively or negatively to line managers' effective HRM implementation from both unitarist and pluralistic HRM perspective.	YES	Summative $P = f(A + M + O)$	Questionnaire Cross sectional Multilevel	2015	Belgium	125 line-managers 899 employees	N/A	<ul style="list-style-type: none"> <li>Line manager's perception of strong HRM processes (distinctiveness, consistency, consensus)</li> <li>Employee's perception of effective HRM</li> </ul>	<ul style="list-style-type: none"> <li>Line manager self-perception of his ability</li> </ul>	<ul style="list-style-type: none"> <li>Line manager self-perception of his motivation</li> </ul>	<ul style="list-style-type: none"> <li>Line manager self-perception of his opportunities to perform properly</li> </ul>	<ul style="list-style-type: none"> <li>Line manager's age</li> <li>Tenure as line manager</li> <li>Span of control</li> <li>Degree of HR responsibility</li> </ul>	In line with unitarist thinking, we find a positive indirect effect of strong HRM processes on HRM implementation effectiveness via line managers' ability. In accordance with pluralist thinking, we find a negative direct relationship between strong HRM processes and HRM implementation effectiveness
Gould-Williams, J. S., & Gatenby, M. (2010). The Effects of Organizational Context and Teamworking Activities on Performance Outcomes.	To evaluate the effects of organizational context and teamworking activities on the performance outcomes of public sector workers.	YES	multiplicative $P = f(A \times M \times O)$  multiplicative $P = f(M \times A)$  multiplicative $P = f(M \times O)$  multiplicative $P = f(A \times O)$	Survey Cross sectional	2003	UK	3165 respondents	<b>H1a:</b> There is a positive relationship between performance related reward schemes and workers' commitment (EC), job satisfaction (JS) and organizational performance (OP) <b>H1b:</b> There is a negative relationship between performance related reward schemes and workers' quit intentions (QI) and stress (ST) <b>H2a:</b> There is a positive relationship between performance appraisals and EC, JS, and OP <b>H2b:</b> There is a negative relationship between performance appraisals and QI and ST <b>H3a:</b> There is a positive relationship between training and development and EC, JS, and OP <b>H3b:</b> There is a negative relationship between training and development and QI and ST <b>H4a:</b> There is a positive relationship between the industrial climate and EC, JS, and OP <b>H4b:</b> There is a negative relationship between the industrial climate and QI and ST <b>H5a:</b> There is a positive relationship between the involvement, high trust culture and EC, JS, and OP <b>H5b:</b> There is a negative relationship between a high control culture and EC, JS, and OP <b>H5c:</b> There is a negative relationship between the involvement, high trust culture and QI and ST. <b>H5d:</b> There is a positive relationship between a high control culture and QI and ST. <b>H6a:</b> The interaction effect of performance related reward schemes and teamworking will be greater than the individual effects on each of the dependent variables (ES, JS, QI, ST, OP). <b>H6b:</b> The interaction effect of performance appraisals schemes and teamworking will be greater than the individual effects on each of the dependent variables (ES, JS, QI, ST, OP). <b>H6c:</b> The interaction effect of training and development and teamworking will be greater than the individual effects on each of the dependent variables (ES, JS, QI, ST, OP). <b>H6d:</b> The interaction effect of the industrial relations climate and teamworking will be greater than the individual effects on each of the dependent variables (ES, JS, QI, ST, OP). <b>H6e:</b> The interaction effect of the high involvement, high trust climate and teamworking will be greater than the individual effects on each of the dependent variables (ES, JS, QI, ST, OP). <b>H6f:</b> The interaction effect of the high control climate and teamworking will be greater than the individual effects on each of the dependent variables (ES, JS, QI, ST, OP).	<ul style="list-style-type: none"> <li>Employee commitment (EC)</li> <li>Job satisfaction (JS)</li> <li>Intention to quit (QI)</li> <li>Stress (ST)</li> <li>Organizational Performance (OP)</li> </ul>	<ul style="list-style-type: none"> <li>Training</li> <li>Development opportunities</li> </ul>	<ul style="list-style-type: none"> <li>Appraisal</li> <li>Discretionary reward</li> </ul>	<ul style="list-style-type: none"> <li>Involvement culture (trust vs control)</li> <li>Industrial relations climate (relationship between managers and unions)</li> <li>Teamworking</li> </ul>	<ul style="list-style-type: none"> <li>Age</li> <li>Job position</li> <li>Service department</li> </ul>	H1a: Partially supported H1b: Rejected H2a: Partially supported H2b: Partially supported H3a: Supported H3b: Supported H4a: Supported H4b: Partially supported H5a: Supported H5b: Partially supported H5c: Partially supported H5d: Partially supported H6a: Rejected H6b: Rejected H6c: Rejected H6d: Rejected H6e: Rejected H6f: Partially supported

Guerci et al., (2015). The impact of human resource management practices and corporate sustainability on organizational ethical climates: An employee perspective.	To analyse how HRM practices with the aim of developing organizational ethics influence the benevolent, principled, and egoistic ethical climates that exist within organizations, while also investigating the possible moderating role played by their employees' perception of corporate sustainability	YES	Summative $P = f(A + M + O)$	Questionnaire  Cross-sectional  Multilevel	2013	Italy, Germany, Poland, Spain, France	6000 respondents	<b>H1a</b> HRM practices aimed at enhancing ethically oriented ability are negatively related to the Egoistic Organizational (local) Ethical Climate (OEC) <b>H1b</b> HRM practices aimed at enhancing ethically oriented ability are positively related to the Benevolent OEC <b>H1c</b> HRM practices aimed at enhancing ethically oriented ability are positively related to the Principled OEC <b>H2a</b> HRM practices aimed at enhancing ethically oriented motivation are negatively related to the Egoistic OEC <b>H2b</b> HRM practices aimed at enhancing ethically oriented motivation are positively related to the Benevolent OEC <b>H2c</b> HRM practices aimed at enhancing ethically oriented motivation are positively related to the Principled OEC <b>H3a</b> HRM practices aimed at enhancing ethically oriented opportunity are negatively related to the Egoistic OEC <b>H3b</b> HRM practices aimed at enhancing ethically oriented opportunity are positively related to the Benevolent OEC <b>H3c</b> HRM practices aimed at enhancing ethically oriented opportunity are positively related to the Principled OEC.	<ul style="list-style-type: none"> <li>Organizational Ethical Climate (OEC) (egoistic, benevolent, principled)</li> </ul>	<ul style="list-style-type: none"> <li>Developing ethical materials to attract job applicants</li> <li>Attracting and selecting employees who share the organization's values.</li> <li>Hiring employees who exhibit high levels of moral development.</li> <li>Training interventions that focus on the values of the organization.</li> <li>Presence of ethical leadership programmes and extensive training on the ethical values</li> <li>Creating cognitive conflict to stimulate independent decisions in ethically ambiguous situations.</li> <li>Developing employee skills in engaging and communicating with stakeholders.</li> </ul>	<ul style="list-style-type: none"> <li>Developing performance goals that focus on means as well as on ends, using not only outcome-based, but also behaviour-based, performance evaluations.</li> <li>Linking bonuses and variable pay to ethical behaviour based on social performance objectives.</li> <li>Promoting awards for good citizenship (moral behaviour).</li> <li>Sanctions for managers and employees who breach the organization's ethical standards.</li> </ul>	<ul style="list-style-type: none"> <li>Job design encourages e to take ethics- related decisions.</li> <li>Employee volunteer programmes.</li> <li>Encouraging members to provide solutions when the organization faces ethical problems.</li> <li>Involving employee representatives and unions in the design, application and review of the ethical infra- structure of the company.</li> <li>Career mechanism is fair, visible to all and linked to the respect of organizational ethical standards.</li> <li>Employee surveys in place to monitor the ethical climate</li> <li>Encouraging the reporting of unethical behaviour and supporting whistleblowing on ethical issues.</li> </ul>	<ul style="list-style-type: none"> <li>Gender</li> <li>Age</li> <li>Level of education</li> <li>Level of employment</li> <li>Workload</li> <li>Company size</li> <li>Industry</li> </ul>	H1a: Not Supported H1b: Supported H1c: Supported H2a: Not Supported H2b: Not Supported H2c: Not Supported H3a: Not Supported H3b: Supported H3c: Supported
Harney, B., & Jordan, C. (2008). Unlocking the black box: line managers and HRM-Performance in a call centre context.	To show the way to unlock the black box of HRM and performance linkages by exploring one of the key variables that mediates the link: whether line managers can stimulate improvements in firm performance by eliciting appropriate employee outcomes.	YES	Undetermined $P = f(A, M, O)$	Case study  Interview  Survey  Multilevel	2008	UK	19 managers  68 employees	N/A	<ul style="list-style-type: none"> <li>Line manager level</li> <li>Perception of HRM policies</li> <li>Employee level</li> <li>Employee commitment</li> <li>Organization citizenship behaviour</li> <li>Attitudes regarding HRM policies</li> <li>Attitudes regarding management style</li> </ul>	<ul style="list-style-type: none"> <li>Training &amp; development program</li> <li>Job descriptions</li> <li>Recruiting based on previous experience</li> <li>Communication skills</li> </ul>	<ul style="list-style-type: none"> <li>Personal motivation</li> <li>Social events</li> </ul>	<ul style="list-style-type: none"> <li>Team working</li> <li>Open communication</li> <li>People involvement</li> </ul>	N/A	The findings question the notion of universal HRM bundles which can be implemented irrespective of context and support that HRM choices and content are often constrained by supplier or network relationships These findings also highlight the potential role of team leaders as the crucial link in successfully enacting HR policies that may enhance performance
Hughes, J. H. J. (2007). The Ability-Motivation-Opportunity Framework for Behavior Research in IS.	To present the origins and prior uses of the AMO framework, as well as explain its components and the relationship among them. To justify the AMO framework use in IS behavioural research.	NO	N/A	Theoretical model	2007	USA	N/A	N/A	<ul style="list-style-type: none"> <li>Consumer behaviour</li> <li>IS developers' behaviour</li> </ul>	N/A	N/A	N/A	N/A	the AMO framework provides a formal theory for developing mid-range theories in information systems research which: investigate individuals' behaviour; collect empirical data; employ statistical analyses; test hypotheses; aspire to explain and predict
Innocenti et al., (2011). Trust as moderator in the relationship between HRM practices and employee attitudes.	To examine the role of trust in management in moderating the effect of HRM practices on employee attitudes. To assess the relationship on three 'bundles' of practices (oriented to increasing ability, motivation, and opportunity to participate)	YES	Summative $P = f(A + M + O)$	Questionnaire  Interview  Cross-sectional  Multilevel	2011	Italy	46 companies  9166 respondents	<b>H1:</b> individual employee attitudes towards the organisation (EAO) are a positive function of seven key HRM practices. <b>H2:</b> These seven HRM practices are supposed to have three different dimensions regarding employee ability, motivation, and opportunity to participate. <b>H3:</b> trust in management moderates the relationships between ability, motivation, opportunity, and employee attitudes towards the organization	<ul style="list-style-type: none"> <li>Individual employee attitudes towards the organisation: (work satisfaction and organisational commitment)</li> </ul>	<ul style="list-style-type: none"> <li>Job evaluation</li> <li>Training</li> <li>Information sharing</li> </ul>	<ul style="list-style-type: none"> <li>Economic Rewards</li> <li>Non-economic forms of recognition</li> </ul>	<ul style="list-style-type: none"> <li>Job design</li> <li>Employee survey</li> </ul>	N/A	Hypothesis 1: Supported Hypothesis 2: Supported Hypothesis 3: Supported

Jiang et al., (2012). How does human resource management influence organizational outcomes? A meta-analytic investigation of mediating mechanisms.	Drawing on the AMO model, this meta-analysis examined the effects of three dimensions of HR systems—skills-enhancing, motivation-enhancing, and opportunity-enhancing—on proximal organizational outcomes (human capital and motivation) and distal organizational outcomes (voluntary turnover, operational outcomes, and financial outcomes).	YES	Summative $P = f(A + M + O)$	Literature review  Meta-analysis	2012	USA, France	116 articles  31463 firms	<p><b>H1a.</b> Skill-enhancing HR practices are positively related to human capital.</p> <p><b>H1b.</b> Motivation-enhancing HR practices are positively related to human capital.</p> <p><b>H1c.</b> Opportunity-enhancing HR practices are positively related to human capital.</p> <p><b>H2a.</b> Skill-enhancing HR practices are more positively related to human capital than motivation-enhancing HR practices.</p> <p><b>H2b.</b> Skill-enhancing HR practices are more positively related to human capital than opportunity-enhancing HR practices.</p> <p><b>H3a.</b> Skill-enhancing HR practices are positively related to employee motivation.</p> <p><b>H3b.</b> Motivation-enhancing HR practices are positively related to employee motivation.</p> <p><b>H3c.</b> Opportunity-enhancing HR practices are positively related to employee motivation.</p> <p><b>H4a.</b> Skill-enhancing HR practices are less positively related to employee motivation than motivation-enhancing HR practices.</p> <p><b>H4b.</b> Skill-enhancing HR practices are less positively related to employee motivation than opportunity-enhancing HR practices.</p> <p><b>H5a.</b> Human capital mediates the negative relationships between the three dimensions of HR systems and voluntary turnover.</p> <p><b>H5b.</b> Employee motivation mediates the negative relationships between the three dimensions of HR systems and turnover.</p> <p><b>H6a.</b> Human capital mediates the positive relationships between the three dimensions of HR systems and operational outcomes.</p> <p><b>H6b.</b> Employee motivation mediates the positive relationships between the three dimensions of HR systems and operational outcomes.</p> <p><b>H7.</b> Human capital, employee motivation, voluntary turnover, and operational outcomes partially mediate the positive relationships between the three dimensions of HR systems and financial outcomes.</p>	<ul style="list-style-type: none"> <li>▪ Human capital</li> <li>▪ Employee motivation</li> <li>▪ Voluntary Turnover</li> <li>▪ Operational outcomes (productivity, quality, service, innovation, and overall operational performance)</li> <li>▪ Financial outcomes (ROA, ROE, market return, sale growth, and overall financial performance)</li> </ul>	<ul style="list-style-type: none"> <li>▪ Recruitment</li> <li>▪ Selection</li> <li>▪ Training</li> </ul>	<ul style="list-style-type: none"> <li>▪ Performance appraisal</li> <li>▪ Compensation incentive</li> <li>▪ Benefit</li> <li>▪ Promotion and career development</li> <li>▪ Job security.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Job design</li> <li>▪ Work teams</li> <li>▪ Employee involvement</li> <li>▪ Formal grievance and complaint processes</li> <li>▪ Information sharing.</li> </ul>	N/A	<p>H1a: Supported</p> <p>H1b: Supported</p> <p>H1c: Supported</p> <p>H2a: Supported</p> <p>H2b: Supported</p> <p>H3a: Supported</p> <p>H3b: Supported</p> <p>H3c: Supported</p> <p>H4a: Supported</p> <p>H4b: Supported</p> <p>H5a: Generally Supported</p> <p>H5b: Generally Supported</p> <p>H6a: Generally Supported</p> <p>H6b: Generally Supported</p> <p>H7: Generally Supported</p>
Katou, A. A., & Budhwar, P. S. (2010). Causal relationship between HRM policies and organisational performance: Evidence from the Greek manufacturing sector.	To investigate the HRM-performance causal relationship in the Greek context. Using SEM, the results of the study revealed that the ability, motivation, and opportunity to perform HRM policy domains are moderated by business strategies (cost, quality, innovation). Motivation to perform is further moderated by managerial style and organizational culture	YES	Summative $P = f(A + M + O)$	Questionnaire  Survey  Cross sectional	2009	Greece	178 HRM managers	<p><b>H2:</b> Strong and positive relationships exist between HRM systems (ability, motivation, opportunity) and HRM outcomes (employee skills, attitudes, behaviours).</p> <p><b>H4:</b> Positive relationships exist between HRM systems and organisational performance.</p>	<ul style="list-style-type: none"> <li>▪ Organisational performance (Effectiveness, efficiency, development, satisfaction, innovation, quality)</li> </ul>	<ul style="list-style-type: none"> <li>▪ Resourcing and development (Recruitment, selection, separation, flexible work arrangements, training and development, monitoring training and development, careers, performance appraisal)</li> </ul>	<ul style="list-style-type: none"> <li>▪ Compensation and incentives (Job evaluation, compensation, promotion, incentives, benefit)</li> </ul>	<ul style="list-style-type: none"> <li>▪ Involvement and job design (Work design, participation, involvement, communication, health, and safety)</li> </ul>	<ul style="list-style-type: none"> <li>▪ Degree of unionisation</li> <li>▪ Age of organisation</li> <li>▪ Capital intensity</li> <li>▪ Size</li> <li>▪ Industry</li> </ul>	<p>H2: Supported</p> <p>H4: Not Supported</p>
Kaufman, B. E. (2015). Market competition, HRM, and firm performance: The conventional paradigm critiqued and reformulated.	This paper argues that on deeper examination both empirical and theoretical arguments have significant flaws and weaknesses which undercut the 'more competition → more HPWPs → higher firm performance' proposition.	NO	N/A	Literature review  Theoretical model	2015	USA	N/A	N/A	<ul style="list-style-type: none"> <li>▪ Profits and growth</li> </ul>	N/A	N/A	N/A	N/A	<p>Using an alternative economics-based model the paper concludes the likely effect of intensified competition is, on balance, the opposite of the standard model; that is, more competition leads to less HPWPs.</p>

Kim et al., (2015). When do international human capital enhancing practices benefit the bottom line? An ability, motivation, and opportunity perspective.	Using the AMO perspective we conceptualize IHC as ability, collaborative climate as motivation, and the firm's level of internationalization as opportunity. We test three alternative AMO models – the additive (main effect), the combinative (two-way interactions), and the multiplicative model (a three-way interaction)	YES	Summative $P = f(A + M + O)$  Combinative $P = f(A(1+M+O))$  Multiplicative $P = f(A \times M \times O)$	Cross-sectional  Survey  Interview  Multilevel	2007	Korea	299 firms 11473 employees	H1: International human capital (IHC) enhancement practices are positively related to a firm's performance (OP) H2: A firm's collaborative climate positively moderates the relationship between a firm's IHC-enhancing efforts and its performance. H3: The firm's level of internationalization positively moderates the relationship between its IHC enhancing practices and OP H4: There is a three-way interaction among a firm's IHC enhancing practices, a collaborative climate, and its level of internationalization on the OP	<ul style="list-style-type: none"> <li>Firm profitability (net profit by organization size)</li> <li>Workforce productivity (net sales by organization size)</li> <li>Net income</li> </ul>	International human capital	Collaborative climate (performance-based incentives, strong communication)	Level of internationalization (% international sales)	<ul style="list-style-type: none"> <li>Level of organizational change</li> <li>Organizational size</li> <li>Organizational age</li> <li>Employee educational level</li> <li>Employee tenure</li> </ul>	H1: Not Supported H2: Not Supported H3: Not Supported H4: Supported
Knies, E., & Leisink, P. (2014). Linking people management and extra-role behaviour: Results of a longitudinal study.	This article examines the validity of the assumption that employees' perceptions of those people management activities of their supervisor that impact on employees' abilities, motivation and opportunities to perform influence employee extra-role behaviour.	YES	Summative $P = f(A + M + O)$  Multiplicative $P = f(M \times O)$	Longitudinal  Multilevel  Survey	2008-2009	NL	3368 employees	H1a: The extent to which employees perceive people management activities has a positive effect on their ability. H2a: An employee's ability has a positive effect on their extra-role behaviour. H1b: The extent to which employees perceive people management activities has a positive effect on their commitment. H2b: An employee's commitment has a positive effect on their extra-role behaviour. H1c: The extent to which employees perceive people management activities has a positive effect on their autonomy. H2c: The effect of an employee's autonomy on their extra-role behaviour is mediated by their commitment	Extra-role behaviour	Ability (training, development, appraisal)	Commitment (compensation, benefits, work life balance)	Autonomy (mobility, job design)	<ul style="list-style-type: none"> <li>Age</li> <li>Tenure</li> <li>Gender</li> <li>Education level</li> <li>Economic situation.</li> </ul>	H1a: Rejected H1b: Rejected H1c: Rejected H2a: Rejected H2b: Supported H2c: Supported
Kroon et al., (2013). High performance work practices in small firms: A resource-poverty and strategic decision-making perspective.	To examine whether the implementation of coherent bundles of HPWPs depends on the scarcity of resources, as reflected in the size of the company, and on strategic decision-making in small firms related to the owner's expertise and attitudes	YES	Undetermined $P = f(A, M, O)$	Cross-sectional  Questionnaire  Multilevel	2012	Denmark	43 small firms  211 employees	Hypothesis concerning differences between small and large companies (i.e., Hypothesis 1: Employees in smaller organisations will perceive fewer motivation and ability practices on average than those in larger organisation)	N/A	<ul style="list-style-type: none"> <li>Training (external and internal)</li> <li>Development</li> </ul>	<ul style="list-style-type: none"> <li>Career plans</li> <li>Wages</li> <li>Information about organization returns, mission, future</li> </ul>	<ul style="list-style-type: none"> <li>Teams</li> <li>Work meetings</li> <li>Autonomy</li> </ul>	<ul style="list-style-type: none"> <li>Organisation age</li> <li>Industry (service vs. construction sector)</li> </ul>	The findings support that smaller but coherent bundles of HPWPs can be found in small organisations and that the implementation of these bundles depends on available resources, strategic decision making and the combination of the two.
Minbaeva, D. B. (2013). Strategic HRM in building micro-foundations of organizational knowledge-based performance.	To describe a research agenda for future micro-foundational research that links strategic HRM and knowledge-based performance.	NO	N/A	Theory building	2012	Denmark	N/A	N/A	Knowledge sharing behaviour	N/A	N/A	N/A	N/A	We have argued that micro-foundations for this link are rooted on the individual level, specifically in antecedents of individual knowledge-sharing behaviour, such as ability, motivation, and opportunity, and in the interactions among these antecedents.
Ming, G., Ganli, L., & Fulei, C. (2014). Pak. J. Statist. 2014 Vol. 30 (5), 751-766 HIGH-PERFORMANCE WORK SYSTEMS, ORGANIZATIONAL IDENTIFICATION AND JOB SATISFACTION	To investigate whether HPWS positively affects job satisfaction (JS) in Chinese management context and explores the role of organizational identification in relationship between HPWS and JS	YES	Summative $P = f(A + M + O)$	Questionnaire  Cross-sectional  Multilevel	2014	China	358	H1: Employees' perceptions of HPWS will be positively associated with job satisfaction H1a: Employees' perceptions of ability-enhancing practices will be positively associated with job satisfaction. H1b: Employees' perceptions of motivation-enhancing practices will be positively associated with job satisfaction. H1c: Employees' perceptions of opportunity-enhancing practices will be positively associated with job satisfaction. H2: Employees' perceptions of HPWS will be positively associated with organizational identification (OI) H2a: Employees' perceptions of ability-enhancing practices improved will be positively associated with OI H2b: Employees' perceptions of motivation-enhancing practices will be positively associated with organizational identification. H2c: Employees' perceptions of opportunity-enhancing practices will be positively associated with organizational identification.	<ul style="list-style-type: none"> <li>Organizational identification</li> <li>Job satisfaction</li> </ul>	structured employment interviews extensive formal training development	<ul style="list-style-type: none"> <li>Performance appraisal bonuses (individual and group performance level)</li> <li>High standard of salary for the diversity scales of job accomplishment during the work</li> <li>Merit-based promotion opportunities.</li> </ul>	<ul style="list-style-type: none"> <li>Regular information sharing communication</li> <li>Formal participation processes</li> <li>Employee autonomy in job design modifications</li> </ul>	<ul style="list-style-type: none"> <li>Employee's position</li> <li>Age</li> </ul>	H1: Supported H1a: Supported H1b: Supported H1c: Supported H2: Supported H2a: Supported H2b: Supported H2c: Supported

Munteanu, A. (2014). What Means High Performance Work Practices for Human Resources in an organization	This paper focused on an overview of the different approaches in the literature to the concept of high-performance work practices (HPWP), showing how this term evolves over time.	NO	N/A	Literature review	2014	Romania	N/A	N/A	<ul style="list-style-type: none"> <li>Competitive advantage</li> </ul>	<ul style="list-style-type: none"> <li>Training of human resources in the workplace</li> <li>Workforce diversity and equality strategies</li> </ul>	<ul style="list-style-type: none"> <li>Manageability performance and remuneration</li> <li>Partnerships between employer and employee</li> <li>Flexible working time arrangement</li> </ul>	<ul style="list-style-type: none"> <li>Decentralization hierarchies</li> <li>Delegating responsibilities of employees</li> <li>Practice teamwork</li> </ul>	N/A	Organizations must on the one hand to satisfy their customers, on the other hand, employees, those in which firms can achieve their goals. The implementation of HPWP is a current problem for organizations wishing to achieve a sustainable competitive advantage.
Obeidat et al., (n.d.). Examining the Link between High Performance Human Resource Practices (HPHRP) and Organisational Performance: Evidence from the Jordanian.	To examine the relationship between High Performance Human Resource Practices (HPHRP) and organisational performance. Moreover, the study attempts to provide empirical verification of the AMO framework as a conceptual model concerning the core components of HPHRP.	YES	$P=f(A \times M \times O)$	Questionnaire Cross-sectional	2009	Jordan	118 firms	<p><b>H1:</b> the three-factor AMO based model will best reflect HPHRP when compared to a one or two-factor model.</p> <p><b>H2:</b> There is a positive relationship between ability-enhancing practices and perceived financial performance (PFP)</p> <p><b>H3:</b> There is a positive relationship between motivation-enhancing practices and PFP</p> <p><b>H4:</b> There is a positive relationship between opportunity-enhancing practices and PFP</p> <p><b>H5:</b> There is a positive relationship between ability-enhancing practices and PFP</p> <p><b>H6:</b> There is a positive relationship between motivation-enhancing practices and PFP</p> <p><b>H7:</b> There is a positive relationship between opportunity-enhancing practices and PFP</p>	<ul style="list-style-type: none"> <li>Financial performance (ROE, sales growth, and profitability)</li> <li>Employee productivity</li> </ul>	<ul style="list-style-type: none"> <li>Staffing</li> <li>Training</li> <li>Development</li> </ul>	<ul style="list-style-type: none"> <li>Performance management</li> <li>Compensation</li> </ul>	<ul style="list-style-type: none"> <li>Opportunity-enhancing practices (does not specify it)</li> </ul>	<ul style="list-style-type: none"> <li>Company size</li> <li>Company age</li> <li>Company ownership</li> <li>Sector within which the company operated</li> </ul>	<p>H1: Supported</p> <p>H2: Supported</p> <p>H3: Supported</p> <p>H4: Supported</p> <p>H5: Supported</p> <p>H6: Supported</p> <p>H7: Supported</p>
Ozcelik, G., & Uyargil, C. (2015). a Conceptual Framework for Line Managers' Hrm Implementation Effectiveness: Integrating Social Context and Amo Theories.	This study is aimed at investigating the factors that can influence the degree to which effective HR practices are implemented, going further than previous theoretical studies by proposing a conceptual model of HR implementation effectiveness	NO	N/A	Theoretical model	2015	Turkey	N/A	<p><b>Proposition 1.</b> An organizational culture supportive of effective HR practices is positively associated with improvements in line managers' AMO.</p> <p><b>P2.</b> A strong and performance-rewarding organizational climate is positively associated with improvements in line managers' AMO.</p> <p><b>P3.</b> Political considerations focusing on HR accountability are positively associated with improvements in line managers' AMO.</p> <p><b>P4.</b> Greater top management support for effective HR practices is positively associated with improvements in line managers' AMO.</p> <p><b>P5.</b> Social interactions improving top management/HR/line manager relationships are positively associated with improvements in line managers' AMO.</p> <p><b>P6.</b> Improvements in line managers' AMO is positively associated with their HRM implementation effectiveness.</p> <p><b>P7.</b> Improvements in line managers' AMO strengthens the relationship climate, political considerations, top between organizational culture, organizational management HR support and line managers' HRM implementation effectiveness.</p>	N/A	N/A	N/A	N/A	N/A	Line managers' ability-motivation opportunity factors can be considered as the mediating dimension between social context factors and their HRM implementation effectiveness.
Raidén et al., (2006). Balancing employee needs, project requirements and organisational priorities in team deployment.	To explore the team deployment strategies of a large construction company with the view of establishing how a balance could be achieved between organisational strategic priorities, operational project requirements and individual employee needs	NO	N/A	Case study Interview Multilevel	2006	UK	Construction organization	N/A	<ul style="list-style-type: none"> <li>Employee Commitment</li> <li>Overall efficiency</li> </ul>	<ul style="list-style-type: none"> <li>Recruitment and selection</li> <li>Training and development</li> </ul>	<ul style="list-style-type: none"> <li>Career development</li> <li>Pay</li> <li>Job security</li> <li>Job challenge</li> <li>Work-life balance</li> </ul>	<ul style="list-style-type: none"> <li>Communication</li> <li>Employee involvement</li> <li>Teamworking</li> <li>Appraisal</li> </ul>	N/A	The findings suggested that project priorities often took precedence over the delivery of the strategic intentions of the organisation in meeting employees' individual needs. This approach is not sustainable in the long term because of the negative implications that such a policy had in relation to employee stress and staff turnover.
Ramsay et al., (2000). Employees and High-Performance Work Systems: Testing inside the Black Box.	To test the competing claims of theories related to HPWS. To explore the linkages from HPWS to employee outcomes and via these to organizational performance.	NO	N/A	Questionnaire Secondary data Cross-sectional Multilevel	1998	UK	British companies	N/A	<ul style="list-style-type: none"> <li>Workplace outcomes variables</li> <li>Financial performance</li> <li>Labour productivity</li> <li>Product/ Service quality</li> <li>Absence rate</li> <li>Turnover rate</li> <li>Change in labour costs</li> </ul>	<ul style="list-style-type: none"> <li>Induction procedures</li> <li>Investment in people accreditation</li> <li>Job security</li> <li>Formal training systems</li> <li>Sophisticated recruitment and selection</li> </ul>	<ul style="list-style-type: none"> <li>Profit-related pay</li> <li>Employee share ownership</li> <li>Performance-related pay</li> <li>Performance appraisal</li> </ul>	<ul style="list-style-type: none"> <li>Upward communication</li> <li>Employee consultation</li> <li>Problem-solving groups</li> <li>Team autonomy</li> <li>Quality management</li> <li>Consultative committees</li> </ul>	<ul style="list-style-type: none"> <li>Employee level (gender, age, unions, work hours)</li> <li>Workplace level (Size, union density, foreign ownership, Sector)</li> </ul>	Results confirm the relationship between HPWS and several measures of workplace performance. However, the assumption that positive performance outcomes from HPWS flow via positive employee outcomes has been shown highly questionable.



Renwick et al., (2013). Green Human Resource Management: A Review and Research Agenda	The paper categorises the existing literature based on the AMO theory revealing the role that Green Human Resource Management (GHRM) processes play in people management practice.	NO	N/A	Literature Review	2013	UK	Several studies	N/A	<ul style="list-style-type: none"> <li>Employee involvement</li> </ul>	<ul style="list-style-type: none"> <li>Recruitment and selection</li> <li>Training</li> <li>Environmental knowledge</li> <li>Management development and leadership</li> </ul>	<ul style="list-style-type: none"> <li>Performance management (PM)</li> <li>Performance appraisal (PA)</li> <li>Pay and Reward Systems.</li> </ul>	<ul style="list-style-type: none"> <li>Tacit Knowledge</li> <li>Empowerment and engagement</li> <li>Supportive Cultures</li> </ul>	N/A	The findings of the review suggest that our understanding of how GHRM practices influence employee motivation to become involved in environmental activities lags behind that of how organizations develop green abilities and provide employees opportunities be involved in EM organizational efforts.
Ruzic, M. D. (2015). Direct and indirect contribution of HRM practice to hotel company performance.	To investigate whether HRM results measured at an individual level and at an organisational level mediate in the link between HRM practice and hotel company financial performance	YES	Undetermined $P = f(A, M, O)$	Interview Questionnaire Multilevel Hotel companies	2012	Croatia	32 managers 424 employees	<p>H1. There is a positive link between HRM practice and hotel company performance.</p> <p>H4. HRM practice influences HRM results measured at the individual level (employee engagement, skills, behaviour, and attitude).</p> <p>H5. There is a positive link between HRM results measured at individual level and HRM results measured at organisational level.</p>	<ul style="list-style-type: none"> <li>Employee engagement</li> <li>Company performance (ROA, ROE, profit margin)</li> </ul>	<ul style="list-style-type: none"> <li>Recruitment Development</li> </ul>	<ul style="list-style-type: none"> <li>Rewarding</li> </ul>	<ul style="list-style-type: none"> <li>Employee Retention</li> </ul>	<ul style="list-style-type: none"> <li>Company ownership</li> <li>Company size</li> </ul>	<p>H1 is not accepted, but universalist approach is confirmed.</p> <p>H4 accepted, which confirms the resource-based view theory</p> <p>H5 is not accepted, but this model confirms the AMO framework</p>
Sarikwal et al., (2013). The Impact of High-performance work practices and organisational citizenship behaviour on turnover intentions	To examine the impact of HPWP on organisational citizenship behaviour (OCB) of the employees and consequently its impact on turnover intentions among the employees.	YES	Summative $P = f(A + M + O)$	Questionnaire Secondary data IT companies	2013	India	112 employees	<p>Objective 1: To study the impact of HPWP on the Organisational Citizenship Behaviour (OCB) of employees.</p> <p>Objective 2: To study the impact of HPWP on the Turnover Intentions.</p>	<ul style="list-style-type: none"> <li>Organization citizenship behaviour (OCB) (altruism, courtesy, civic virtue, sportsmanship, and conscientiousness)</li> <li>Turnover intentions</li> </ul>	<ul style="list-style-type: none"> <li>Selection</li> <li>Training</li> <li>Performance appraisal</li> <li>Career planning</li> </ul>	<ul style="list-style-type: none"> <li>Pay for performance</li> <li>Job security</li> <li>Work-life balance</li> <li>Information sharing</li> </ul>	<ul style="list-style-type: none"> <li>Participation in decision making</li> <li>Teamwork</li> <li>Autonomy.</li> </ul>	N/A	The implementation of HPWP in IT companies have a strong positive link with OCB of employees. The correlation of HPWP and OCB with turnover intentions is not very significant.
Schimansky, S. (2014, June 30). The Effect of a High-Commitment Work System on Innovative Behavior of Employees.	The aim of this literature review is to examine the influence of a High-commitment work system (HCWS) on employees' innovative behavior by addressing the potential mediating role of the ability, motivation, and opportunity (AMO) factors and innovative organizational climate.	NO	N/A	Literature Review	2014	NL	Several studies	<p><b>Proposition 1:</b> In a HCWS recruitment &amp; selection and training &amp; development support employees' established and new abilities to be innovative.</p> <p><b>P2:</b> In a HCWS rewards and career management increase the intrinsic and extrinsic motivation of employees to participate and dedicate a discretionary effort desired outcomes.</p> <p><b>P3:</b> In a HCWS participation and performance management increase employees' opportunities to be involved and share knowledge, ideas and opinions.</p> <p><b>P4:</b> Employees' abilities (skills and knowledge) increase the recognition of possible improvements and innovations, their promotion and their implementation.</p> <p><b>P5:</b> Motivation increases all three innovative steps by guiding and focusing employees' behaviour discretionary efforts towards innovative behaviour.</p> <p><b>P6:</b> Opportunities to participate for employees increase their willingness to communicate their ideas and be involved throughout the entire innovative behaviour process.</p> <p><b>P7:</b> Employees' abilities, motivation and opportunities to participate increase all phases of the innovative behaviour process when the AMO factors are supported by a HCWS</p>	<ul style="list-style-type: none"> <li>Innovative behaviour</li> </ul>	<ul style="list-style-type: none"> <li>Recruitment and Selection</li> <li>Training and development</li> </ul>	<ul style="list-style-type: none"> <li>Rewards</li> <li>Career management</li> </ul>	<ul style="list-style-type: none"> <li>Participation management</li> </ul>	N/A	A High-commitment work system can either foster employees' innovative behaviour by supporting their abilities, motivation, and opportunity to participate or by shaping employees' perception through an innovative organizational climate.
Shih et al., (2007). Can high performance work systems really lead to better performance?	This study presents a conceptual scheme concerning the core constituents of high-performance work system (HPWS) and examines their effects on firm performance.	YES	Undetermined $P = f(A, M, O)$	Modelling technique Questionnaire Secondary data longitudinal Cross-sectional	2002	Taiwan	208 Taiwanese companies and foreign affiliates	N/A	<ul style="list-style-type: none"> <li>Financial outcomes</li> <li>HR effectiveness</li> </ul>	<ul style="list-style-type: none"> <li>Proper worker selection and training programs</li> </ul>	<ul style="list-style-type: none"> <li>Compensation related to performance and promotion opportunities.</li> </ul>	<ul style="list-style-type: none"> <li>Information sharing and worker involvement mechanisms</li> </ul>	<ul style="list-style-type: none"> <li>Industry environment</li> <li>Firm size</li> <li>Degree of internalization</li> <li>Previous firm performance</li> </ul>	Better-performing firms were found to invest in more sophisticated HRM practices, which further enhanced organizational performance.



Shin et al., (2016). Do high-involvement HRM practices matter for worker creativity? a cross-level approach.	Drawing on the AMO framework, this study investigated how and when high-involvement human resource management practices (HI HRM practices) influence worker creativity.	YES	Summative $P = f(A + M + O)$	Firm level data Employee level data Cross-sectional Multilevel	2005	Korea	240 manufacturing companies 3316 employees	H1: HI HRM practices are positively associated with individual intrinsic job motivation. H2: Learning orientation moderates the relationship between HI HRM practices and intrinsic job motivation H3: HI HRM practices are positively associated with worker creativity. H4: Intrinsic job motivation mediates the relationship between HI HRM practices and worker creativity.	<ul style="list-style-type: none"> <li>Intrinsic job motivation</li> <li>Worker creativity</li> </ul>	<ul style="list-style-type: none"> <li>On the job training</li> <li>Coaching/mentoring</li> <li>Training investment</li> <li>Training development</li> </ul>	<ul style="list-style-type: none"> <li>Feedback</li> </ul>	<ul style="list-style-type: none"> <li>Job rotation</li> <li>Job enrichment</li> <li>Information</li> <li>Democratic culture</li> </ul>	<ul style="list-style-type: none"> <li>individual level (gender, educational level, job position, technological competence)</li> <li>Organizational level (firm age and industry)</li> </ul>	H1: Supported H2: Supported H3: Supported H4: Supported
Sterling, A., & Boxall, P. (2013). Lean production, employee learning and workplace outcomes: A case analysis through the ability-motivation-opportunity framework.	This study examines an implementation of lean production in fast-moving consumer goods manufacturing, analysing how it has affected employee learning and job quality.	NO	N/A	Case study Multilevel Interview	2010	New Zealand	5 managers 55 front line workers	N/A	<ul style="list-style-type: none"> <li>Quality performance (reduction in customer complaints)</li> <li>Reduce absenteeism</li> </ul>	<ul style="list-style-type: none"> <li>Training / learning</li> <li>Problem solving skills (5 whys, fishbone)</li> </ul>	<ul style="list-style-type: none"> <li>Motivation to learn</li> <li>Tracking of key performance indicators</li> </ul>	<ul style="list-style-type: none"> <li>Opportunity to learn</li> <li>Self-managing teams</li> </ul>	N/A	The study shows how the ability-motivation-opportunity framework can be used to organise relevant theory and throw light on the systemic nature of workplace learning.
Tuuli, M. M., & Rowlinson, S. (2009). Performance consequences of psychological empowerment.	To re-examine the relationship between empowerment and performance behaviours, proposing that three intermediate performance determinants—motivation, ability, and opportunity to perform—may hold the key to unlocking the empowerment-performance relationship dilemma.	YES	Summative $P = f(A + M + O)$	Multilevel Survey Questionnaire	2009	Hong Kong	115 firms 380 responses	H1: Psychological empowerment will be significantly and positively related to (a) task and (b) contextual performance behaviours H2: intrinsic motivation will partially mediate the positive relationship between psychological empowerment and (a) task and (b) contextual performance behaviours H3: opportunity to perform will partially mediate the positive relationship between psychological empowerment and (a) task and (b) contextual performance behaviours H4: ability to perform will partially mediate the positive relationship between psychological empowerment and (a) task and (b) contextual performance behaviours	<ul style="list-style-type: none"> <li>Task performance behaviours</li> <li>Contextual performance behaviours</li> </ul>	<ul style="list-style-type: none"> <li>Experience</li> <li>Training</li> <li>Knowledge developed</li> </ul>	<ul style="list-style-type: none"> <li>Intrinsic motivation (personal satisfaction, team satisfaction)</li> </ul>	<ul style="list-style-type: none"> <li>Opportunity to performance (availability of resources: materials, tools, job information, time, training, regulations)</li> </ul>	<ul style="list-style-type: none"> <li>individual level (gender, age, educational, ethnicity, nationality, and tenure)</li> <li>Organizational level (firm age and size)</li> </ul>	H1 (a, b): Supported H2 (a, b): Supported H3 (a, b): Supported H4 (a, b): Supported
Vermeeren, B. (2010). Diversity in HRM Implementation and its Effect on Performance.	To test whether HRM activities applied by line managers affect employee perceptions of HRM. We also tested whether these perceptions influence employee satisfaction and divisional performance.	YES	Undetermined $P = f(A, M, O)$	Multilevel Questionnaire	2010	Denmark	439 respondents	H1: Actual HRM is positively related to perceived HRM. H2: Transformational leadership moderates the relationship between actual and perceived HRM, such that when the level of transformational leadership is high, the relationship between actual and perceived HRM is stronger than when the level of transformational leadership is low. H3: The relationship between perceived HRM and transformational leadership on the one hand and divisional performance on the other hand is mediated by employee satisfaction.	<ul style="list-style-type: none"> <li>Employee satisfaction</li> <li>Divisional performance</li> </ul>	<ul style="list-style-type: none"> <li>Recruitment and Selection</li> <li>Training and development</li> </ul>	<ul style="list-style-type: none"> <li>Rewards</li> <li>Performance appraisal</li> </ul>	<ul style="list-style-type: none"> <li>Participation</li> <li>Autonomy</li> </ul>	<ul style="list-style-type: none"> <li>Gender</li> <li>Age</li> <li>Educational level</li> </ul>	H1: Rejected H2: Rejected H3: Rejected
Wood et al., (2015). Dimensions and location of high-involvement management: fresh evidence from the UK Commission's 2011 Employer Skills Survey.	To test whether all the practices associated with high-involvement management tend to coexist, or whether various sets of practices form discrete elements. We find that these dimensions of high-involvement management are separate.	YES	Summative $P = f(A + M + O)$	Telephonic survey Multilevel Cross-sectional	2011	UK	87500 respondents 44691 establishments	H1a: Role involvement practices coexist, and the pattern of association among them reduces to a one-dimensional structure. H1b: Organisational involvement practices coexist, and the pattern of association among them reduces to a one-dimensional structure. H1c: Skill acquisition practices coexist, and the pattern of association among them reduces to a one-dimensional structure. H1d: Motivational practices coexist, and the pattern of association among them reduces to a one-dimensional structure. H1e: The practices within each type of high-involvement practice coexist, and the pattern of association among all high-involvement practices reduces to a four-dimensional structure. H2: The practices within role involvement, organisational involvement and skill acquisition coexist, and the pattern of association among all high-involvement practices reduces to a three-dimensional structure.	N/A	<ul style="list-style-type: none"> <li>Induction</li> <li>Work-shadowing</li> <li>Off-the-job training</li> <li>On-the-job training</li> <li>Training plan</li> <li>Training budget</li> <li>Annual performance review</li> <li>Evaluation of training.</li> </ul>	<ul style="list-style-type: none"> <li>Organisational performance-related pay</li> <li>Individual performance-related pay</li> <li>Flexible benefits</li> <li>Flexible working</li> <li>Equal opportunity policy.</li> </ul>	<ul style="list-style-type: none"> <li>Task discretion</li> <li>Task variety</li> <li>Problem-solving teams</li> <li>Project teams</li> <li>Team briefings</li> <li>Suggestion scheme</li> <li>Staff survey.</li> </ul>	<ul style="list-style-type: none"> <li>Private or public, organizational</li> <li>Size</li> <li>Market strategy</li> <li>Production or service</li> <li>Workplaces with TQM</li> </ul>	H1a: Supported H1b: Supported H1c: Supported H1d: Not Supported H1e: Not Supported H2: Supported

Anexo B: Información por artículo. 2ª revisión (2016-2022)

Article	Year	Country	Sample	Objectives / Main ideas	Method	Main Results	Future Research	Performance	AMO practices	Control/mediating
Alba et al., (2021). Identifying the determinants of individual scientific performance: A perspective focused on AMO theory.	2021	Spain	471 Spanish academic researchers	Analyse how motivation and the opportunity to investigate enhance the direct relation between the researcher's human capital and individual scientific performance.	Hypotheses  Regression analysis  <b>Questionary with 36 items on a 5-point Likert scale (New designed by experts)</b>	<ul style="list-style-type: none"> <li>Confirm the moderating role of a researcher's motivation and opportunities.</li> <li>Researcher motivation contributes as a moderating variable rather than the researcher opportunity dimensions (R2= 0.411 vs R2=0.108)</li> <li>Individual scientific performance is a product of an interaction between the researcher's intrinsic and extrinsic motivation and his or her abilities</li> <li>Universities providing economic and human resources reinforce the relationships between their researchers' abilities (academic human capital) and scientific performance</li> </ul>	<ul style="list-style-type: none"> <li>Longitudinal investigation</li> <li>Specific characteristics of sample may affect results.</li> <li>Replicate in other fields</li> <li>Replicate at international level</li> </ul>	<b>Research performance</b> Data envelopment analysis (DEA)	<b>Abilities</b> Researcher abilities Scientific knowledge Proactive creativity Research accuracy Skill of accepting criticism <b>Motivation</b> Extrinsic motivation Intrinsic motivation <b>Opportunities</b> Availability of financial and human resources Availability of information resources	Length of academic career
Al-Shahwani, T. M. (2020). Impact of AMO enhancing human resource management practices on sustainable competitive advantage in insurance companies in Qatar.	2020	Qatar	106 managers of insurance companies	Analyse relationship between AMO model enhancing human resource management and sustainable competitive advantage.	Hypotheses  Factor analysis Pearson Correlation  Structural equation modelling (SEM)  <b>Questionary</b>	<ul style="list-style-type: none"> <li>All dimensions of AMO model had influenced on sustainable competitive advantage</li> <li>The most significant impact is for the ability-enhancing human resource management practices (<math>\beta=0.51</math>, P-value&lt;0.05), followed by opportunity-enhancing human resource management practices (<math>\beta=0.47</math>, P-value&lt;0.05) and motivation-enhancing human resource management practices (<math>\beta=0.34</math>, P-value&lt;0.05) on sustainable competitive advantage</li> </ul>	<ul style="list-style-type: none"> <li>Impact of AMO on other variables (competitive capability, organizational success, job performance)</li> <li>Conduct with other economies sectors (health or industrial)</li> <li>Increase the sample</li> </ul>	Sustainable competitive advantage (8 items)	Ability-enhancing HRM practices (10 items) Motivation-enhancing HRM practices (12 items) Opportunity-enhancing HRM practices (12 items)	N/A
Andreeva, T., & Sergeeva, A. (2016). The more the better ... or is it? The contradictory effects of HR practices on knowledge-sharing motivation and behaviour.	2016	Russia	329 secondary school teachers	Examine how individual-level antecedents such as motivation and ability to share knowledge mediate the relationship between HR practices and knowledge-sharing behaviour	Hypotheses  Factor analysis  Structural equation modelling (SEM)  <b>Questionary (6-point Likert scale)</b>	<ul style="list-style-type: none"> <li>The study demonstrates that opportunity-enhancing HR practices act as a moderating condition that activates either intrinsic or extrinsic motivation to share knowledge and may completely offset the effect of motivation-enhancing HR practices</li> <li>Intrinsic motivation to share knowledge significantly predicts knowledge-sharing behaviour with a dramatic increase in coefficient (<math>\beta=0.47</math>, <math>p&lt;0.001</math>) and extrinsic motivation to share knowledge drops to non-significance (<math>\beta =0.056</math>, <math>p&gt;0.05</math>). The impact of intrinsic motivation on behaviour is more than twice that of the extrinsic</li> </ul>	<ul style="list-style-type: none"> <li>longitudinal study, by tracking the dynamics of the employee attitudes and behaviours after the implementation of the HR practices.</li> <li>taking a more inductive approach to develop a more precise concept and measures of the ability of employees to share knowledge.</li> </ul>	Knowledge sharing behaviour	<b>See appendix 1</b> <b>Intrinsic M HR practices (3 items)</b> Measuring job characteristics <b>Extrinsic M HR practices (3 items)</b> Monetary and non-monetary rewards, evaluation of knowledge sharing <b>Ability HR practices (3 items)</b> Training to develop communication, teamwork a knowledge-sharing <b>Opportunity practices (7 items)</b>	Gender Age Level of education Tenure Overall experience in profession
Bayo-Moriones, A., & Bello-Pindado, A. (2021). Differences in the impact of AMO bundles of line managers and frontline workers on the performance of manufacturing firms.	2021	Uruguay Argentina	301 manufact. plants	Analyse the impact on manufacturing performance of HRM practices across two job levels within manufacturing firms (line managers and frontline workers)  In this case, performance can be enhanced by promoting any of the three components independently, and a minimal application of one of the components can be compensated by intensive application of the others (In formulating the hypotheses, we will use the additive model)	Hypotheses  Ordinary least squares multiple regression  <b>Questionary based on tested and widely used scales</b>	<ul style="list-style-type: none"> <li>Ability and opportunity bundles for line managers are positively associated with manufacturing performance. However, only the motivation bundle affects manufacturing performance for frontline workers.</li> </ul>	<ul style="list-style-type: none"> <li>Test whether the findings hold in different geographical contexts</li> <li>Conduct the analysis in different industries and for more narrowly defined occupations</li> <li>application of alternative approaches of the AMO model (e.g., multiplicative, or combinative)</li> <li>Longitudinal studies</li> </ul>	Manufacturing Performance (additive manufacturing performance index Table 3: efficiency, performance, delivery, defective products, speed, etc.)	<b>Abilities</b> Selection techniques variety, Selection criteria, Training and development <b>Motivation</b> Job security Internal promotion High-performance compensation Performance appraisal <b>Opportunities</b> Job autonomy Information-sharing Employee <b>Items 5-point Likert scale (previously used)</b>	Size of the firm Technology intensity Industry sector Age of the plant Membership of a multinational Country
Bello-Pintado, A., & Garcés-Galdeano, L. (2019). Bundles of HRM practices in family and non-family firms: the impact on enhancing performance.	2019	Uruguay Argentina	301 manufact. plants	Analyses how ability, motivation, and opportunity bundles of HRM practices affect enhanced manufacturing performance in family firms (FFs) and non-family firms (NFFs)	Hypotheses  ordinary least squares (OLS) linear regression  <b>Questionary based on tested and widely used scales</b>  <b>Personal interviews</b>	<ul style="list-style-type: none"> <li>HRM practices aimed at enhancing abilities (A) and giving workers the opportunity to participate in the decision-making process (O), individually and interactively, have a positive effect on manufacturing performance in FFs. A motivational bundle of HRM practices (M) has a positive effect on enhanced performance in NFFs. The study therefore establishes the existence of hierarchies among bundles, which vary with company ownership</li> </ul>	<ul style="list-style-type: none"> <li>Improving the understanding of how HRM operates in FFs</li> <li>to analyse the impact of age of the company on the configuration of AMO, paying special attention to the generational role</li> <li>to analyse whether the adoption of systems of HRM practices depends on the type of workers</li> </ul>	Manufacturing Performance in FFs and NFFs	<b>Abilities</b> Selection techniques, Selection criteria, Training <b>Motivation</b> Job security Internal promotion High-performance compensation Performance evaluation <b>Opportunities</b> Job autonomy Information-sharing Employee participation <b>Items 5-point Likert scale (previously used)</b>	Size of the firm Age of the plant Advanced manufacturing technologies (AMT) & sector
Beltrán-Martín, I., & Bou-Lusar, J. C. (2018). Examining the intermediate role of employee abilities, motivation, and opportunities to participate in the relationship between HR bundles and employee performance.	2018	Spain	83 HR managers 83 R&D managers 262 R&D employees	Our study constructs an integrative model to analyse the contribution of employees' abilities, motivation, and opportunities to participate in the relationship between HRM and employee performance. In doing so, we test a multilevel model that analyses the top-down influence of three HR bundles (skill-, motivation-, and opportunity-enhancing) on employee AMO, and the bottom-up contribution of these three employee-related variables on their collective performance	Hypotheses  multi-level structural equation modelling (MSEM)  <b>Questionary based on previously published scales</b>	<ul style="list-style-type: none"> <li>the skill-enhancing and opportunity-enhancing HR bundles increase both employee abilities and motivation; the opportunity-enhancing HR bundle also contributes to increasing employee opportunities to participate.</li> <li>HR bundles have a positive influence on employee abilities, motivation, and opportunities to participate, but we found no support for the contribution of these three employees-related variables to their collective performance</li> </ul>	<ul style="list-style-type: none"> <li>measure HR practices based on employees' perceptions to analyse how far employees experience what management intends through its HR practices</li> <li>this research should be replicated and extended to other units or departments</li> <li>using larger samples, should assess the influence of individual HR practices on employee AMO.</li> </ul>	Employee performance (challenge-oriented OCBS) → capture employee behaviours that involve making constructive suggestions for improving and challenging the status quo <b>Items 6-point Likert scale (previously used)</b>	Ability-enhancing HRM practices (10 items) Motivation-enhancing HRM practices (12 items) Opportunity-enhancing HRM practices (12 items) <b>HR practices assessed using previously used scale (7-point scale)</b>	<b>Mediating variables</b> 6 items to assess employee's perceived ability 7 items to assess affective commitment (motivation) 6 items to assess psychological empowerment (O) <b>(7-point Likert scale)</b> <b>Control variables</b> Sector, firm size

Bhatti et al., (2021). High-performance work systems, innovation, and knowledge sharing: An empirical analysis in the context of project-based organizations.	2021	Pakistan	170 Full-time employees working in project-based SMEs	Explore the relationship among high performance work systems (HPWS), innovation, and knowledge sharing in project-based organizations	Confirmatory factor analysis (CFA)  Cronbach alpha  Analysis of moment structure (AMOS) (direct-indirect effects)  Questionary	<ul style="list-style-type: none"> <li>Our results confirm the initial hypothesis of the causal relationship of two of the AMO HRM practices, that is, ability and motivation with innovation performance with the mediation of knowledge sharing, while the third hypothesis of opportunity enhancing HRM practice was not accepted.</li> <li>opportunity-enhancing HR practices did not have a significant impact on the innovation outcomes either directly or through the mediating effect of knowledge sharing.</li> </ul>	<ul style="list-style-type: none"> <li>Future studies can get HR managers' input for a clearer picture.</li> <li>Our study focused on the mediating role of knowledge sharing between the relationship of HPWS and supervisor-rated innovation outcomes. Future work can further explore this relationship and add moderating factors like leadership, absorptive capacity and learning culture.</li> </ul>	See appendix A <b>Knowledge sharing</b> (7-point Likert scale based on past studies. Measuring the frequency of KS) <b>Innovation outcome</b> (7-point Likert scale based on past studies. Rate the innovation perform respect to other organizations)	See appendix A <b>Abilities</b> Training, provision, selectivity in recruitment processes, feedback given by supervisors <b>Motivation</b> Performance evaluation, pay for performance, competitive pay compared to other organizations <b>Opportunities</b> Opportunity to participate, autonomy in decision- <b>23 Items 7-point Likert scale (previously used)</b>	N/A
Boon et al., (2019). A Systematic Review of Human Resource Management Systems and Their Measurement.	2019	N/A	Systematic review of 495 empirical studies on 516 HR systems	Brief overview of HR systems theory. Review how HR systems research has developed over the past three decades. Findings suggest that there are 2 main issues (increasingly broad conceptualization and measurement of HR systems and the lack of clarity on the HR systems construct at different level	SYSTEMATIC REVIEW	<ul style="list-style-type: none"> <li>In most studies, conceptualization and measurement do not match the core theoretical assumption of synergies between HR practices in a system.</li> <li>It is not always clear whether it is indeed the HR system causing effects</li> <li>Approaches to measuring and combining HR practices in a system have moved further towards a focus on broad undifferentiated HR systems</li> <li>Despite calls to address nonadditive effects, the use of additive approaches to combine HR practices in a system has increased rather than decreased recently. Research thus still provides only limited insight into the core theoretical assumption of synergies between HR practices</li> <li>HR systems implicitly assumes that the HR system is shaped by time, cross-sectional studies may yield inaccurate results. Longitudinal studies have hardly examined the "system" element of HR systems over time.</li> <li>Over 80% of studies use HR system measures that are new or adapted from other scales and that have not received extensive validation</li> </ul>	<ul style="list-style-type: none"> <li>Future research summarized in table 6</li> <li>Appendix (Types of relationships between practices)</li> <li>Table 5 (5 perspectives on HR systems at different levels)</li> </ul>	N/A	N/A	N/A
Bos-Nehles et al., (2013). Employee perceptions of line management performance: Applying the AMO theory to explain the effectiveness of line managers' HRM implementation.	2013	NL	174 line-managers & 1065 employees in 2 firms (international naval defence company & national construction company)	We predict that line managers' performance will depend on their ability to apply HRM practices, and that their motivation and the opportunity provided will enhance this effect  Our position is that the AMO theory should not be represented by either a fully additive or a fully interactive effect, but by a combination of both (A×M) (A×O)	Hypotheses  Multiple Regression analysis (6 regression models including various interaction effects)  Questionary	<ul style="list-style-type: none"> <li>Only ability has an independent and direct positive effect on the effectiveness of HRM implementation by line managers. This effect can be influenced, positively or negatively, by motivation and opportunity. Hence, multiplicative effects only for ability and motivation and for ability and opportunity, giving a relationship of the form <math>P = f(A(1+M+O))</math>.</li> <li>Therefore, HRM departments should aim to enhance line managers' abilities and provide adequate opportunities for them to carry out the expected HRM duties</li> </ul>	<ul style="list-style-type: none"> <li>Replicate this study in other organizations and industries</li> <li>Include the effect of variables such as the organizational structure</li> <li>Include HRM content and leader-member exchange relationships between line members and subordinates</li> <li>Collect data from multiple stakeholders surrounding the line manager, not only subordinates but also line, HRM and senior managers</li> </ul>	Performance at employee level HRM implementation effectiveness. Subordinates' satisfaction on: Personnel admin. Recruitment and selection. Career development Evaluation and rewarding People management (Total 26 items) <b>(5 point previously used scales)</b>	Amo factors measured at the line management level <b>Abilities (competences)</b> 5 items occupational self-efficacy 2 items line managers training <b>Motivation (desire)</b> 9 items willingness to perform 4 items value-added <b>Opportunities (capacity support, policy &amp; procedures, HRM implementation effectiveness)</b> Capacity to spend on HR practices Support from HR professionals Supportive policy and procedures (5+4+3 items) <b>(Previously used scales)</b>	Organizational context Experience as a line manager Line manager educational level
Bouwman et al., (2019). Stimulating teachers' team performance through team-oriented HR practices: the roles of affective team commitment and information processing.	2019	NL	704 teachers in 70 teams from 19 VET institutions	We predicted that team-oriented HR practices would be positively and indirectly associated with team innovation and efficiency, through positive associations with teachers' affective team commitment and engagement in information processing.	Hypotheses  PCA & Confirmatory Factor analysis (CFA)  Hypothesis testing  Multilevel structural equation modelling (MSEM)  Online survey (self-report)	<ul style="list-style-type: none"> <li>We found that all team-oriented HR practices, except for team development, were positively associated with teachers' affective team commitment and their engagement in information processing.</li> <li>In turn, affective team commitment and information processing were positively associated with both team innovation and efficiency.</li> <li>Consequently, the team-oriented HR practices of recruitment, team evaluation and teamwork facilitation were indirectly associated with team innovation and efficiency.</li> </ul>	<ul style="list-style-type: none"> <li>Combine reports from different sources, to obtain more reliable data</li> <li>Longitudinal research should be conducted to make stronger causal claims.</li> </ul>	Team innovation Team efficiency <b>Items 5-point Likert scale (previously used)</b>	<b>Abilities</b> Recruitment (4 items) Team development (4 items) <b>Motivation</b> Team evaluation (4 items) <b>Opportunities</b> Teamwork facilitation <b>Items 5-point Likert scale (New instrument developed based in previous studies)</b>	<b>Mediating variables</b> Information processing Affective team commitment <b>Items 5-point Likert scale (previously used)</b> Control variables Gender, age, team size
Cai et al., (2020). Optimizing Employee Creativity in the Digital Era: Uncovering the Interactional Effects of Abilities, Motivations, and Opportunities.	2020	N/A	115 papers	Personal factors of employee creativity were categorized into ability-enhancing practices while the contextual factors were classified into two dimensions—motivation- and opportunity-enhancing practices  This organizing framework enables us to clearly depict how contextual factors (a) separately and (b) jointly influence individual employee creativity. Specifically, it enables us to depict two possible models—combination and multiplicative models	LITERATURE SEARCH DESCRIPTIVE RESULTS	<ul style="list-style-type: none"> <li>To categorize predictors of employee creativity, we classified them into the 3 dimensions of the AMO model, which is a new approach to understanding employee creativity in depth.</li> <li>Our proposed new framework includes the two main models to explain how ability, motivation, and opportunity predictors interact in different ways to predict employee creativity.</li> <li>Figure 2 represents the framework including the two main interactive models: Combination model &amp; multiplicative model</li> <li>The combination model, <math>p = f[A(1 + M + O)]</math>, suggests that ability is a prerequisite for performance and motivation and opportunity can separately help in the presence of sufficient ability</li> <li>the multiplicative model illustrates that ability, motivation and opportunity together operate in a complementary or interactive manner: <math>p = f[A \times M \times O]</math></li> </ul>	<ul style="list-style-type: none"> <li>Consider the dark side of predictors involving negative creative results</li> <li>Adopt broader definitions of creativity</li> <li>Multilevel approach, not only contextual-oriented motivation, and opportunity</li> </ul>	<b>Creativity</b>	<b>Predictors of creativity</b> <b>Ability-enhancing practices</b> Personality/cognition, Personal motivation, Affect/mood <b>Motivation-enhancing practices</b> Rewards, Leadership and supervisory behaviours, Goals, and expectations <b>Opportunity-enhancing practices</b> Job/task design, Organizational climate and culture, Teamwork, Social network	N/A

Chung, G. H., & Pak, J. (2021). Is there internal fit among ability-, motivation-, and opportunity-enhancing HR practices? Evidence from South Korea.	2021	South Korea	7 firms of South Korea (Manufacturer of consumer and industrial goods) 197 employees manager pairs	Our study attempts to replicate recent developments by categorizing employee-rated HPWS along three subdimensions: ability-, motivation-, and opportunity-enhancing HR practices. Next, we conduct two different tests; additive and interactive models, to predict individual performance.	Hypotheses  Confirmatory factor analysis (CFA)  Hierarchical linear modelling (HLM)  Correlations  In-place Survey	<ul style="list-style-type: none"> <li>The results of the hierarchical linear modeling (HLM) demonstrate general support for the additive model.</li> <li>The analyses indicated that the greatest contributions to employee performance result from opportunity-enhancing HR practices, followed by ability- and motivation-enhancing HR practices.</li> <li>We find that motivation-enhancing HR practices negatively moderate the relationships between the other two dimensions and the outcomes. Only the interaction of ability- and opportunity-enhancing HR practices positively influences individual performance</li> </ul>	<ul style="list-style-type: none"> <li>Replicate in other countries</li> <li>Examine the mediating role of two types of individual motivation and related variables, such as self-efficacy, commitment, and human capital, to name a few.</li> <li>Further research is necessary regarding considering various types of outcome variables.</li> </ul>	<b>Individual performance</b> (3 items)	<b>Ability</b> Selection, training, clear paths in the organization <b>motivation</b> Quantifiable results, performance appraisal, compensation <b>opportunity-enhancing practices</b> Participation in decision-making, empowerment, opportunity to suggest improvements <b>Items 5-point Likert scale (previously used)</b>	Age Gender Tenure Education Job function Organizational membership (which of the 7 companies)
Collins, C., & Kehoe, R. (2017). Examining strategic fit and misfit in the management of knowledge workers.	2017	USA	230 USA software firms (>100 employees)	Examining whether better firm performance depends on the alignment between an organization's HR system and its innovation strategy. We start by outlining 2 alternative innovation strategies (exploration and exploitation). We then present 3 alternative HR systems (engineering, bureaucratic, and commitment) and detail how each may be aligned or with the unique knowledge requirements of exploration and exploitation (See Table 1 & table 2) <b>Figure 1, 2, 3 → interactive effects of each HR systems on profit growth (See other figures in PDF)</b>	Hypothesis  Ordinary least squares (OLS)  Interview with the CEO Survey with 20 core workers of each company (64% part. rate)	<ul style="list-style-type: none"> <li>Our measures of alternative HR systems are negatively correlated with one another, suggesting that firms primarily choose to manage core knowledge workers using one strategic HR approach</li> <li>The choice of HR systems by firms is important for understanding competitive advantage and performance under alternative strategies. We argue that the choice of HR systems matters for shaping the knowledge behaviors required by specific innovation strategies.</li> <li>The authors demonstrate that alternative HR systems support either an exploration or exploitation strategy and that alignment between a firm's HR system and innovation strategy results in firm performance gains and misalignment results in performance penalties.</li> </ul>	<ul style="list-style-type: none"> <li>Replicate in larger multidivisional firms</li> <li>Future research may seek to determine whether firms can successfully support multiple innovations strategies in different parts of the organization</li> <li>Adding additional control variables</li> <li>Explore other outcomes (employee behaviour)</li> </ul>	<b>Firm performance</b> One-year profit growth Return on Equity (ROE)	<b>Attachment (motivation - M)</b> Challenging work, growth opportunities, social & monetary connection to the organization <b>Selection (capabilities - A)</b> fit to the organization culture and values, fit to the job & task requirements <b>Coordination &amp; control (O)</b> Professional standards, feedback from peers, control by direct supervisors <b>2 HR SYSTEMS</b> <b>5-point Scale - 21 items (Table 3)</b> (Previously used)	<b>Control variables</b> 3 dummy controls for the 3 regions Firm age Firm size Sales <b>Innovation Strategy</b> Exploration Exploitation
Dasi et al., (2021). Teams and Project Performance: An Ability, Motivation, and Opportunity Approach.	2021	Project-based company of Brazil	285 projects	This article analyzes the relationships between project performance and the team's ability, motivation, and opportunity (AMO) by exploring which combinations of AMO factors are best for project performance at different levels of complexity  3 models are test: <b>Additive model</b> <b>Multiplicative model</b> <b>Constraining factor model</b>	Hypotheses  Correlation matrix  F-value R-square  Project data (Complexity, project goals, team composition performance, etc)	<ul style="list-style-type: none"> <li>Our study shows that in simple projects, ability is the key factor both as a main effect and as a constraining factor that acts as a bottleneck for project performance. In the case of complex projects, the multiplicative model is superior given the significant interaction effects of motivation.</li> </ul>	<ul style="list-style-type: none"> <li>Explore other potential measures for capturing collective aspects of the workings in teams</li> <li>Conduct field experiments in other context involving interventions related to team's AMO</li> </ul>	<b>Project performance</b> Financial gains obtained at the end of the project	<b>AMO factors</b> <b>Ability</b> % Of team members in each project with a university degree <b>motivation</b> Team participation used as proxy. % Of project members engage in the team's meetings <b>opportunity-enhancing practices</b> % Of team members in management position	<b>Control variables</b> Size of the project team Overloaded project members Problems identified
Dastmalchian, A. et al. (2020). High-performance work systems and organizational performance across societal cultures.	2020	14 countries likely to vary on dimensions of societal culture (Australia, Austria, Canada, China, Egypt, India, Iran, Italy, Japan, Malaysia, Pakistan, Taiwan, Turkey, Vietnam)	7187 employees 387 firms	This paper assesses whether societal culture moderates the relationship between HRM practices and organizational performance. In assessing Societal culture, we focus on individualism-collectivism and power distance	Hypotheses  Multi-level model using Linear effects program for R  Interviews & Questionary	<ul style="list-style-type: none"> <li>The findings contribute towards assessments of whether managers should adopt HR 'best practices' to improve performance in all countries, or whether specific groups of HR practices that are congruent with societal culture should be adopted.</li> <li>Support for the universal 'best practice' perspective with HPWS positively associated with organizational performance</li> <li>Neither individualism-collectivism constructs moderate the HPWS-OP relationship. We failed to identify a positive association between HPWS and OP in countries with low power distance</li> <li>We find OP in a diverse range of countries is positively associated with 2 of 3 dimensions of HR systems (skill and opportunity-enhancing practices), but not with motivation-enhancing practices. - The relationship between A and M with OP are not moderated by societal culture.</li> <li>Power distance has a negative moderating impact on the relationship between opportunity-enhancing practices and organizational performance.</li> </ul>	N/A	Financial performance Labour productivity <b>5-point Likert Scale</b>	<b>11 of the 13 practices most frequently included in 92 studies analysed by Combs (2006)</b>  <b>HR practices categorized into 3 dimensions (AMO)</b>	<b>Societal culture scores</b> Power distance, institutional collectivism, in-group collectivism (Using established scales from GLOBE project) <b>Control variables</b> Age, size, industry, sector, degree of market competition
Díaz-Fernández et al., (2020). Strength of HRM systems and perceived organizational support as determinants of employment relationships: The perspective of HR managers and workers' representatives.	2020	Spain	Managers, employees' representative  2 Sectors (hospitality & financial) 2 separate analysis  130 managers from hotels, 87 from financial Union representative (30 valid questionaries)	Explain and understand how the strength of a HRM system and perceived organizational support (POS) determine employment relationships (ERs) in organizations and the behaviours they generate in terms of organizational citizenship behaviour (OCB) and intentions to remain (IR)	Hypotheses  Confirmatory factor analysis (CFA)  Cluster analysis  ANOVA  Questionary	<ul style="list-style-type: none"> <li>The financial sector is always higher in its assessment of AMO practices than the hospitality, from a managerial perspective.</li> <li>It is possible to find different ER models within a sector, each one of which is characterized by different HRM systems</li> <li>From the point of view of HR managers, in cases where ERs are based on strong HRM systems and high levels of POS, managers expect high extra role behaviours and intention to remain and, more importantly, when the ER changes, managerial perceptions of employees' behaviours also change.</li> <li>From the perspective of the union or workers' representatives, the low scores they predict for OCB and IR are coherent with the type of ER they perceive.</li> <li>The results obtained in both studies confirm our argument regarding the need for knowledge about the perceptions of both sides of the ER to provide a better understanding of behaviours</li> </ul>	<ul style="list-style-type: none"> <li>It would be desirable to have a direct answer from employees. It might be possible to undertake case studies</li> <li>to measure the level of agreement between managers and unions, and to consider it as a moderator between ERs and POS/IR would also be interesting</li> </ul>	<b>OCB</b> Items such as: I express my opinions honestly, etc. <b>IR</b> Items such as: I'd turn down a job with more pay, I tend to stay, etc. <b>5-point Likert Scale (Using previous scales)</b>	<b>Ability</b> Recruitment, training <b>motivation</b> Pay for performance, individual performance bonus or other outcomes, promotion possibility <b>opportunity-enhancing practices</b> Communication of company goals or company operating performance, or financial performance <b>5-point Likert Scale (Using previous scales)</b>	<b>POS</b> Items such as: the organization cares for my wellbeing, etc. <b>Strength of HRM</b> Distinctiveness, consistency, consensus <b>5-point Likert Scale (Using previous scales)</b>

Edgar et al., (2020). The HPWS and AMO: a dynamic study of system- and individual-level effects.	2020	New Zealand	250 service employees	to examine how organizational system-level (HPWS) and individual-level AMO affect employees' performance. This paper proposes that employee task performance is resultant from the integration of system- and individual-level AMO factors with employee contextual performance	Hypotheses  PLS-SEM  Questionary	<ul style="list-style-type: none"> <li>This study finds both organizational system (HPWS) and individual AMO dimensions have positive associations with employees' performance.</li> <li>At the system level, the supportive role played by contextual performance is highlighted with pro-social behaviours fully mediating the relationship between the HPWS and task performance.</li> <li>At the individual level, contextual performance is found to partially mediate the relationship between ability and task performance and fully mediate the relationship between motivation and task performance.</li> <li>Opportunity, on the other hand, is significantly associated with task but not contextual performance.</li> </ul>	<ul style="list-style-type: none"> <li>Compare different dimensions of HR practices (HIWP – H commitment WP)</li> <li>Explore if interaction of multi-level AMO generates better performance</li> <li>Longitudinal or multi-wave research design</li> <li>Micro-level analysis</li> </ul>	Task Performance 7-point Likert Scale (Using previous scales)	<p><b>HPWS Ability-enhancing practices</b></p> <p>Training, feedback for performance, Career goals</p> <p><b>Motivation-enhancing practices</b></p> <p>Job security, rewards, high standards in workplace</p> <p><b>Opportunity-enhancing practices</b></p> <p>Decision-making opportunities, autonomy, team environment, opportunity to express ideas</p> <p><b>AMO (self-perception)</b> (e.g., I get very involved if necessary...) 7-point Likert Scale (Using previous scales)</p>	Contextual performance (OCB) – OCBO & OCBI 7-point Likert Scale (Using previous scales)
Eib et al., (2020). What helps managers being fair? Predicting managers' self-reported justice enactment during pay setting using the ability-motivation-opportunity framework.	2020	Sweden	169 managers from a large company	Investigate managers' ability, motivation, and opportunity as predictors of managers' self-reported justice enactment during pay setting. 4 dimensions of enacted justice (distributive, procedural, informational, interpersonal). Justice enactment is defined as "managerial actions that act in accordance with the [justice rule] standards"	Hypotheses  Hierarchical multiple regression analysis for each of the 4 justice variables  Survey	<ul style="list-style-type: none"> <li>Ability indicators contributed to all justice enactment dimensions, with self-efficacy in one's role as pay-setting manager being positively related to all justice enactment dimensions.</li> <li>Motivation indicators contributed to three justice enactment dimensions (not informational), with managers' outcome expectations of pay setting being positively related to distributive justice enactment.</li> <li>Opportunity indicators contributed to three justice enactment dimensions (not interpersonal), where social support in the pay-setting process predicted these justice enactment dimensions.</li> <li>Demographics and personality variables only explained additional variance in interpersonal justice enactment.</li> </ul>	<ul style="list-style-type: none"> <li>Study whether managers' self-efficacy as pay-setting managers is related to giving employees more voice</li> <li>Measure more specific aspects of intrinsic motivation</li> <li>Examine if AMO experiences are related to subordinates' perceptions of justice</li> </ul>	Self-reported justices' enactment Distributive justice enactment Procedural justice enactment Informational justice enactment Interpersonal justice enactment 5-point Likert Scale (Using previous scales)	<p><b>Ability</b></p> <p>Self-efficacy in pay-setting role</p> <p>Sufficient training for pay-setting role</p> <p><b>motivation</b></p> <p>Intrinsic motivation</p> <p>Outcome expectations of pay setting</p> <p><b>opportunity-enhancing practices</b></p> <p>Social support in pay-setting process</p> <p>Time sufficiency in pay-setting process</p> <p>5-point Likert Scale (Using previous scales)</p>	Age Gender Nº of subordinates Tenure manager Extroversion Conscientiousness Neuroticism Openness Agreeableness 5-point Likert Scale
Garmendia et al., (2021). High-involvement HRM, job satisfaction and productivity: A two wave longitudinal study of a Spanish retail company.	2021	Spain	Longitudinal – 2 waves  97 stores & 6016 responses in 2011 85 stores & 5842 responses in 2015	Test the causal effect of an advanced HR system (HIWS) on store productivity from a longitudinal perspective, based on a two-wave dataset  To consider two measurements of both dependent and independent variables and to test the reverse causal path, that is, the effect of store productivity on HIWS.  To analyze first the causal linkage between HIWS and job satisfaction, and then the causal influence of job satisfaction on store productivity  To assess the impact that store productivity may have on employee JS  Figure 1 → 3 cross-lagged bivariate models for hypothesis testing	Hypotheses  Structural equation modelling, using a cross-lagged model (CLM)  2 sources: Survey for perceived levels of HIWP and JS Archive data for productivity measures	<ul style="list-style-type: none"> <li>The findings suggest that the association between HRM and store productivity may be conditioned by the recessionary actions that employers adopt in response to financial difficulties: the need to improve productivity forces managers to implement practices that reduce JS among employees. The results highlight the importance of good communication, and quality information, in times of difficulty, to reduce resistance from employees.</li> <li>The high autoregressive coefficients of store productivity suggest that retail companies might not always benefit economically from the implementation of HIWS; store productivity is conditioned by customer participation, which imposes a ceiling effect.</li> <li>Enriched job environments are related to higher JS values. Results show that HIWS and JS were positively correlated in both waves. This means that more autonomy, training, information, and the ability to participate in strategic decision-making in combination are positively associated with employee JS</li> </ul>	<ul style="list-style-type: none"> <li>More waves</li> <li>Less time lag between series</li> <li>Higher sample size</li> <li>Analyze other dimensions of performance apart from productivity in which employees have a direct influence, such the level of absenteeism or the quality of the service delivered</li> </ul>	Job satisfaction Overall feeling regarding the job (Using previous scales)  Productivity Calculated as the total sales volume per working hours	<p><b>HIWS – additive index including:</b></p> <p><b>Ability</b></p> <p>Training</p> <p><b>motivation</b></p> <p>Work methods autonomy</p> <p>Information (Could be also seen as opportunity)</p> <p><b>opportunity-enhancing practices</b></p> <p>Participation (Could be also seen as motivation or abilities)</p> <p>6-point Likert Scale (Using previous scales)</p>	Store size Previous measurements of productivity
Guerci et al., (2017). Empirical insights on the nature of synergies among HRM policies - An analysis of an ethics-oriented HRM system.	2017	6 countries (Italy, Germany, Poland, UK, Spain, France)	6000 employees	Testing the existence of synergistic effects between the policy domains of HRM systems targeted at the development of organizational ethics  We compare an independent effects model, according to which the AMO policy domains of the HRM system under study exert an additive effect on outcomes, with a synergistic effects model, according to which these policies have interactive effects.	Hypotheses  Exploratory factor analysis  Partial Least Squares (PLS)  Questionary	<ul style="list-style-type: none"> <li>Our findings support the existence of synergies among AMO policy domains, even if the characteristics of the synergistic effects on the employee perception of benevolent ethical climate are different from the characteristics of the synergistic effects on the employee perception of principled ethical climate</li> <li>We found evidence that some multiplicative effects among AMO policy domains exist</li> <li>However, our findings do not support the notion that all AMO policy domains are directly relevant to the outcome, as well as interconnected with each other. More specifically, our findings suggest that (i) while the ability and opportunity policy domains have direct effects on both ethical climates, the motivation policy domain acts as "booster" of such effects; and (ii) there are selective interactions among AMO policy domains, which vary in relation to the considered outcome</li> </ul>	<ul style="list-style-type: none"> <li>Mediators of the linkage between AMO and ethical outcomes</li> <li>Focus on a diverse range of HRM systems (to understand if some systems are more likely to develop internal synergies than others)</li> <li>Involve multiple respondents (line/top managers, HR managers)</li> <li>Use different measurements of HRM implementation</li> </ul>	Employee perceptions of benevolent and principle ethical climate 6-point Likert Scale (Using previous scales)	<p><b>Ability</b></p> <p>7 items</p> <p><b>motivation</b></p> <p>4 items</p> <p><b>opportunity-enhancing practices</b></p> <p>7 items</p> <p>5-point Likert Scale (Using previous scales)</p>	N/A
Hafeez et al., (2020). Examining the effect of high-performance human resource practices on team performance in development sector projects: Mediating role of trust.	2020	Pakistan	192 managerial and non managerial employees of development sector projects National and international NPOs	To analyze the effect of AMO-enhancing high-performance human resource practices (HPHRP's) on team performance in development sector projects, and to explore whether trust mediates this relationship	Hypotheses  Regression analysis  Preacher and Hayes bootstrap method  Questionary	<ul style="list-style-type: none"> <li>Results showed a positive relationship between ability motivation opportunity enhancing HPHRP's and team performance, while trust significantly mediates the relationship</li> </ul>	<ul style="list-style-type: none"> <li>Use other sampling methods</li> <li>Explore other mediators, such as emotions</li> <li>testing the model in other services, for example, medical or education.</li> </ul>	Team performance 3 items scale 5-point Likert Scale (Using previous scales)	<p><b>Ability-enhancing HPHRPs</b></p> <p>6 items scale (Jiang, 2013)</p> <p><b>Motivation-enhancing HPHRPs</b></p> <p>5 items scale (Jiang, 2013)</p> <p><b>Opportunity-enhancing HPHRPs</b></p> <p>5 items scale (Jiang, 2013)</p> <p>5-point Likert Scale (Using previous scales)</p>	Trust 5 items scale 5-point Likert Scale (Using previous scales)
Hassan et al., (2020). Managing the Obligation to Stay through Employee Involvement, Recognition and AMO Model: A Study Among Millennial Employees.	2020	Malaysia	168 employees of SME's	To investigate the impact of human resource practices on normative commitments. To determine the role of the AMO model as a mediator in the relationship associated with HR practices and normative commitments	Hypotheses  Structural equation modelling - Partial Least Squares (PLS)  Questionary	<ul style="list-style-type: none"> <li>The results indicate that both employee involvement and employee recognition have a significant impact on the normative commitment.</li> <li>Surprisingly, the AMO model has an insignificant direct relationship with normative commitment.</li> <li>The results indicate that both employee involvement and employee recognition have a significant positive relationship with the AMO model</li> <li>The mediating role of the AMO model between the involvement of employees, and the recognition of employees with normative commitment has not been established.</li> </ul>	<ul style="list-style-type: none"> <li>Expand the research framework across large scale organizations in different countries</li> <li>Longitudinal research</li> <li>Widening of the sample size</li> </ul>	Normative commitment (6 items) 7-point Likert Scale (Using previous scales) See Appendix	<p><b>Employee involvement (30 items)</b></p> <p><b>Employee recognition (5 items)</b></p> <p><b>AMO</b></p> <p><b>Ability (7 items)</b></p> <p>Ability self-perception</p> <p><b>Motivation (5 items)</b></p> <p>Engagement self-perception</p> <p><b>Opportunity (5 items)</b></p> <p>Opportunities self-perception (information, support, autonomy...) 7-point Likert Scale (Using previous scales)</p>	N/A

<p>Hauff et al., (2021). Exploring necessary conditions in HRM research: Fundamental issues and methodological implications.</p>	<p>2021</p>	<p>1099 firms</p>	<p>Executives and HRM managers (firms at least 20 employees) (Chemicals, pharmaceutical engineering, banking, others...)</p>	<p>We will test two models. In the first model we follow a more traditional approach, assuming that AMO-enhancing HRM practices are directly necessary for employee performance. The second model also considers intermediate outcomes</p>	<p>Hypotheses  Necessary conditions analysis (NCA)  Telephone interviews</p>	<ul style="list-style-type: none"> <li>Model 1- Because the effect sizes for A- and M-enhancing HRM practices are small and not significant, we can conclude that those HRM practices are not necessary for high employee performance. In contrast, the effect for O-enhancing HRM practices is larger than 0.1 and significant, which indicates a meaningful necessary condition.</li> <li>Model 2 - Considering human capital as intermediate outcome, the results show a significant effect for M- and O-enhancing HRM practices, whereas the effect for A-enhancing HRM practices is not significant. Considering employee attitudes as intermediate outcome, the results show a significant effect for M- and O-enhancing HRM practices whereas the effect for A-enhancing HRM practices is not significant. In both instances, only O-enhancing HRM practices show an effect size larger than 0.1 indicating a meaningful necessary condition. In contrast, looking at the relationships between human capital, employee attitudes, and employee performance, we found that human capital and employee attitudes are necessary for employee performance</li> </ul>	<ul style="list-style-type: none"> <li>Longitudinal</li> <li>Other performance measures</li> <li>Set of the AMO-enhancing HRM practices could be extended</li> <li>Other respondents (not only managers)</li> </ul>	<p><b>Employee group performance</b></p>	<p><b>Additive index of each AMO domain</b> <b>Ability-enhancing practices</b> Recruitment/selection, training <b>Motivation-enhancing practices</b> Profit-based pay, extensive benefits, clear career paths, job security <b>Opportunity-enhancing practices</b> Task variety, semi-autonomous work groups, empowerment, information-sharing  <b>5-point Likert Scale</b> (Using Jiang, Lepak, Hu, and Baer (2012) scales, although there is not agreement on which practices constitute HPWP)</p>	<p><b>Human capital</b> Construct with 2 indicators <b>Employee attitudes</b> Construct with 3 indicators <b>Control variables</b> (only for OLS regression to illustrate the difference between NCA and regression analysis) Firm size, firm age, industry, strong order fluctuations, pressure of competition, HRM strategic orientation, collective bargaining</p>
<p>Ho, H., &amp; Kuvaas, B. (2020). Human resource management systems, employee well-being, and firm performance from the mutual gains and critical perspectives: The well-being paradox.</p>	<p>2020</p>	<p>UK</p>	<p>14384 employees within 1347 firms</p>	<p>The overall objective of this study is to contribute to HRM research by examining the current well-being paradox. We do this by (a) examining multiple dimensions of well-being, including happiness, health, and social relationships, and (b) examining the additive, interactive, and nonlinear relationships among HRM, well-being, and performance.</p>	<p>Hypotheses  Confirmatory factor analysis  Correlations  Test for nonlinear effects  Multilevel modelling  WERS survey</p>	<ul style="list-style-type: none"> <li>HRM systems yield a performance effect that exceeds the effect of single practice, suggesting positive synergies among HRM practices.</li> <li>The opportunity bundle has a positive impact on firm performance, but when integrating it with skills and motivation bundles, the result becomes negative, indicating dis-synergy of interactions among HRM bundles.</li> <li>At moderate levels of adoption, HRM practices are positively correlated with employee well-being and higher levels of commitment, job satisfaction, and management relations, as well as lower levels of anxiety. However, at high levels, the relationship is less positive and even turns negative with lower levels of job satisfaction and management relations (curvilinear relationship)</li> </ul>	<ul style="list-style-type: none"> <li>Retest our nonlinear hypotheses with Longitudinal designs.</li> <li>Examine possible moderators (individual, organizational, institutional factors)</li> <li>Use objective financial data instead of subjective measures on firm performance</li> <li>Use more established, validated measures of the constructs</li> </ul>	<p><b>Organizational performance</b> (3 Items: financial performance, labour productivity, quality of product service)</p>	<p><b>Aggregated index (HRM practices)</b> <b>Ability-enhancing practices</b> Staff training, Selective hiring <b>Motivation-enhancing practices</b> Performance-related pay, Flexibility <b>Opportunity-enhancing practices</b> Job autonomy, Teamwork, Supportive management, Information sharing, Participatory decision-making <b>See Appendix</b> <b>Employee well-being</b> (organizational commitment, job satisfaction, work intensification, anxiety, management relations) <b>Multiple-item scales</b> (using previous studies, particularly those using WERS data)</p>	<p><b>Control</b> <b>Employee level:</b> Sex Age Type of job Hours per week Union membership <b>Workplace level:</b> Industry Age of firm Firm size</p>
<p>Hosseingholizadeh et al., (2016). The role of motivation, ability, and opportunity in achieving effective knowledge-work: Knowledge work and MAO.</p>	<p>2016</p>	<p>Iran</p>	<p>350 university employees</p>	<p>To empirically test the impact of the AMO model on knowledge work</p>	<p>Hypotheses  Structural equation modelling (SEM)  PLS  hierarchical multiple regression  Self-report questionnaire</p>	<ul style="list-style-type: none"> <li>The findings confirm that motivation, ability, and opportunity independently influence knowledge-work behaviour.</li> <li>Also, results revealed that both intrinsic and extrinsic motivation has significant influence on knowledge work; however intrinsic motivation has a higher effect than extrinsic motivation.</li> </ul>	<ul style="list-style-type: none"> <li>Qualitative research will allow deeper examination of the relationships</li> <li>Consider other measures of opportunity dimension</li> <li>Further studies in different countries and contexts</li> </ul>	<p><b>Knowledge work</b> 11 items measuring the extent to which employees create, share, and apply knowledge during their day-to-day activities (Using previous scales)</p>	<p><b>Ability</b> 4 items (ability of employees to create, share and apply knowledge and experience) <b>Motivation</b> 22 items (the extent to which employees believe that they receive extrinsic and intrinsic incentives) <b>Opportunity</b> 3 items (the extent of time that employees spend to create, share, and apply knowledge) (Using previous scales)</p>	<p>N/A</p>
<p>Jyoti, J., &amp; Rani, A. (2017). High performance work system and organisational performance: role of knowledge management. Personnel Review, 46(8), 1770–1795. <a href="https://doi.org/10.1108/PR-10-2015-0262">https://doi.org/10.1108/PR-10-2015-0262</a></p>	<p>2017</p>	<p>India</p>	<p>58 managers  246 employees of telecom. organizations</p>	<p>To explore the HPWS through AMO model and its impact on organizational performance. Further, the mediating role of knowledge management between high performance work system and organizational performance has also been evaluated</p>	<p>Hypotheses  Confirmatory factor analysis  Structural equation modelling (SEM)  PLS  questionnaire</p>	<ul style="list-style-type: none"> <li>The study indicates that HPWS positively affects organizational performance. This study also found that the ABILITY dimension is the strongly predictor of organizational performance.</li> <li>The study revealed that HPWS positively influences knowledge management</li> <li>The study revealed the dimension-wise impact of HPWS on knowledge management and found that out of three dimensions, ABILITY is most strong predictor of knowledge management</li> <li>There is a positive relationship between knowledge management and OP</li> <li>knowledge management act as a mediator between HPWS and OP</li> </ul>	<ul style="list-style-type: none"> <li>Further studies in different contexts</li> <li>Examine HPWS in public sectors</li> <li>Longitudinal studies</li> <li>Examine more mediating variables (innovation, organizational culture, and organizational commitment)</li> <li>Explore other dimensions of knowledge sharing such as knowledge leverage or knowledge accumulation</li> </ul>	<p><b>Organizational performance</b> Financial performance Employee performance Operational performance <b>5-point Likert Scale</b> (Using previous scales)</p>	<p><b>HPWS</b> <b>Ability</b> Selection, training <b>Motivation</b> Appraisal, rewards, feedback, job secure, career management, promotion <b>Opportunity</b> Information, involvement in decision making, team working, communication <b>5-point Likert Scale</b> (Using previous scales)</p>	<p><b>Knowledge management</b> Knowledge acquisition Knowledge sharing Knowledge approach <b>5-point Likert Scale</b> (Using previous scales)</p>
<p>Katou, A. A. (2017). How does human resource management influence organisational performance? An integrative approach-based analysis.</p>	<p>2017</p>	<p>Greece</p>	<p>996 employees of 108 private organizations</p>	<p>To examine the effects of (HRM) system (which integrates both content and process of HR practices) on both proximal organizational outcomes (such as job satisfaction, motivation, and organizational commitment) and distal organizational outcomes (such as employee engagement, organizational citizen behaviour (OCB), co-operation among employees, intention to quit, and operational</p>	<p>Hypotheses  Confirmatory factor analysis  Structural equation modelling (SEM)  questionnaire</p>	<ul style="list-style-type: none"> <li>HRM content is more positively related to job satisfaction and motivation and less related to organizational commitment than HRM process. HRM system is sequentially related to organizational outcomes (both directly and indirectly) and significantly influences employee JS and motivation, as well as OCB and co-operation among employees, and operational performance</li> <li>Business strategies positively influence the content dimension of the HRM, and the process dimension of the HRM system.</li> <li>Strategic management orientation leads to a strong HRM system (having the features of distinctiveness, consistency, and consensus), which eliminates the ambiguities regarding strategic and HRM goals. In turn, the strong HRM system develops shared perceptions of HR practices</li> <li>Employee attitudes and employee behaviour positively, serially, and partially mediate the relationship between HRM as experienced and OP. HR practices as experienced positively influence OP, employee attitudes fully mediate the relationship between HR practices as experienced and employee behaviour, and employee behaviour fully mediates the relationship between employee attitudes and OP</li> </ul>	<ul style="list-style-type: none"> <li>Longitudinal studies</li> <li>Larger sample sizes</li> <li>Considering that Greece is experiencing a severe financial crisis, the findings from this unique context may not generalize across other contexts (Future research should consider including other countries such as Cyprus, Portugal, Spain, and Ireland that are experiencing similar financial crises)</li> </ul>	<p><b>Organizational performance</b> Productivity, Growth, Creativity <b>5-point Likert Scale</b> (Using previous scales)</p>	<p><b>Business strategies</b> (cost, innovation, quality) <b>HR content</b> (Resourcing, development, rewards, relations) <b>HR process</b> (distinctiveness, consistency, consensus) <b>HR as experienced</b> (resourcing, training, rewards, relations) <b>5-point Likert Scale</b> (Using previous scales)</p>	<p><b>Controls</b> (sector, size of the organization) <b>Employee attitudes</b> (job satisfaction, motivation, commitment) <b>Employee behaviour</b> (engagement, OCB, Co-operation, intention to quit) <b>5-point Likert Scale</b> (Using previous scales)</p>



Kengatharan, N. (2020). Firm performance: HR practices and IT.	2020	India	147 financial and non-financial firm managers	To investigate the direct and combined effects of human resource management practices and information technology on firm performance.	Hypotheses  Exploratory factor analysis  Correlation analysis  questionnaire	<ul style="list-style-type: none"> <li>The results confirm that HRM practices significantly contribute to firm performance.</li> <li>The combined effect of HRM practices with information technology has significantly positively related to firm performance such the positive relationship between HRM practices and firm performance is stronger at a high usage of technology than at low usage.</li> </ul>	<ul style="list-style-type: none"> <li>Longitudinal studies</li> <li>Further studies in similar culturally countries</li> <li>Focus on a multisource method</li> </ul>	<b>Firm performance</b> (subjective measuring) Growth of sales, net profit, overall firm performance, sales target, profit in comparison to their competitors <b>5-point Likert Scale</b> (Using previous scales)	<b>HRM Practices</b> ("most popular") Job secure, training, teamworking, recruitment, involvement in decision-making, rewards, information <b>7-point Likert Scale</b> (Using previous scales)	<b>Control variables</b> Firm size, firm age, firm type <b>IT measure</b> <b>5-point Likert Scale</b> (Using previous scales)
Kloutsiniotis, P. V. & Mihail, D. M. (2017). Linking innovative human resource practices, employee attitudes and intention to leave in healthcare services.	2017	Greece	296 doctors and nurses	To examine the effects of high-performance work systems (HPWS) on employees' work engagement and job satisfaction, and the mediating effect of these variables on employees' affective commitment and intention of leaving their hospital	Hypotheses  Structural equation modelling (SEM)  On-line questionnaire	<ul style="list-style-type: none"> <li>The findings indicate a strong positive effect of HPWS on employees' job satisfaction, affective commitment, and work engagement and a negative effect on their intention to leave. In addition, employees' engagement and job satisfaction positively mediate the HPWS effects on employees' affective commitment and negatively on their intention to leave.</li> <li>Although the control variables (age, gender, education) had no significant effects on our model, when controlling for "job position," we found some significant correlation with employees' engagement. Hence, we conducted a multi-group mediation analysis for both employee groups, namely, nurses and doctors. Surprisingly enough, the findings indicated that engagement had no mediation effects on doctors' HPWS perceptions and their affective commitment</li> </ul>	<ul style="list-style-type: none"> <li>Longitudinal studies</li> <li>Add more items to the scales</li> <li>Collect data from HR managers (multi-level approach)</li> </ul>	<b>Affective commitment</b> 6 items scale <b>Intention to leave</b> 3 items scale <b>5-point Likert Scale</b> (Using previous scales)	<b>HPWS</b> – 31 items (7 subscales) to create a unitary index for HPWS Recruitment and selection, training and development, employee autonomy, participation in decision-making, employment security, job clarity, performance management <b>5-point Likert Scale</b> (Using previous scales)	<b>Job satisfaction</b> 3 items scale <b>Work engagement</b> 5 items scale <b>5-point Likert Scale</b> (Using previous scales) <b>Control variables</b> Age, gender, education
Kundu et al., (2018). Ability-motivation-opportunity enhancing human resource practices and firm performance: Evidence from India.	2018	India	563 employees of 204 firms	To investigate the diverse performance outcomes related to the AMO bundles	Hypotheses  Regression analyses  Questionnaire	<ul style="list-style-type: none"> <li>The results have demonstrated that the adoption of 3 AMO components, results in enhanced affective commitment and improved firm performance.</li> <li>Our findings have indicated that motivation-enhancing and ability-enhancing HR practices are more effective in improving the firm performance than opportunity-enhancing HR practices</li> <li>For commitment, the findings reveal that all the 3 subsets are positively associated with affective commitment in Indian employees. The magnitude of relationship also varies here. It has been found that ability-enhancing HR practices are far more effective in enhancing the affective commitment among employees than motivation and opportunity practices</li> <li>Affective commitment fully mediates the relationship between O and firm performance and partially mediates the relationships of A and M HR practices with performance. It means that opportunity practices only have indirect effects on firm performance through increase in affective commitment of employees. Whereas A &amp; M HR practices have both direct as well as indirect effects on performance</li> </ul>	<ul style="list-style-type: none"> <li>Include objective measures (not only subjective perceptions)</li> <li>Longitudinal studies</li> <li>Investigate other mediating effects (trust, motivation, employee engagement)</li> <li>Explore the moderating role of JS</li> <li>Replicate in other countries with different backgrounds</li> </ul>	<b>Firm performance</b> <b>9 items</b> – respondents asked to consider how their firms were performing in comparison to competing firms <b>5 point -Likert Scale</b> (Using previous scales)	<b>HPWS (reflective constructs &amp; additive indexes)</b> ( <b>38 items - table 1</b> ) <b>Ability</b> Training, rigorous staffing <b>Motivation</b> performance-based appraisal and compensation, employee relations <b>Opportunity</b> Self-managed teams, flexible work, empowerment <b>5 point -Likert Scale</b> (Using previous scales)	<b>Affective commitment</b> 4 items <b>5 point -Likert Scale</b> (Using previous scales) <b>Control variables</b> Gender, age of employees, ownership
Latorre et al., (2016). High commitment HR practices, the employment relationship and job performance: A test of a mediation model.	2016	Spain	835 workers (service, education, food manufacture)	This study outlines and tests a high commitment model of human resource (HR) practices and its association with outcomes through a path including employee perceptions and attitudes <b>Additive approach 3.3.2.1</b>	Hypotheses  Correlations  Harman's single-factor test  means of path analysis  Structural equation modelling (SEM)  Questionnaire	<ul style="list-style-type: none"> <li>High commitment HR practices were related to employee performance through the mediating effect of perceived organizational support, a fulfilled psychological contract and job security, as key features of the employment relationship, and job satisfaction</li> <li>This model was tested and broadly supported. More specifically, more HR practices were associated with higher levels of POS, psychological contract fulfilment and job security. These partially mediated the relationship between HR practices and job satisfaction; job satisfaction, in turn, was associated with higher performance. However, one element of the proposed model was not supported. There was a direct link between a fulfilled psychological contract and performance</li> </ul>	<ul style="list-style-type: none"> <li>Use multiple sources of information</li> <li>Longitudinal data</li> <li>Explore alternative individual-level performance-related indicators (OCB, labour turnover)</li> <li>Multilevel analysis (organizational-level factors and organizationally relevant outcomes would enrich our understanding)</li> </ul>	<b>Employee performance</b> 6 items; 5-point scale <b>Sickness absence</b> 1 item; 5-point scale (Using previous scales)	<b>Ability</b> Training and development <b>Motivation</b> Provision of merit pay, performance appraisal, provision of interesting/varied jobs, environment free of harassment <b>Opportunity</b> Equal opportunities, support with nonwork responsibilities, participation in decision making <b>Likert Scale</b> (Using previous scales)	<b>Perceived organizational support (POS)</b> 4 items; 5-point scale <b>Psychological contract</b> 15 items; 5-point scale <b>Job security</b> 4 items; 5-point scale <b>Job satisfaction</b> 4 items; 5-point scale (Using previous scales) <b>Control variables</b> Type of contract, Sector
Ma et al., (2017). Why do high-performance human resource practices matter for team creativity? The mediating role of collective efficacy and knowledge sharing.	2017	China	370 employees and 90 team leaders in 16 firms (variety of industries)	Multilevel model examining the relationship between high-performance human resource practices and team creativity	Hypotheses  Confirmatory factor analysis  Correlations  mediation model  Questionnaire	<ul style="list-style-type: none"> <li>The results show that team efficacy mediates the relationship between ability-enhancing practices and team creativity, and knowledge sharing mediates the relationship between motivation-enhancing practices and team creativity.</li> <li>Our results suggest that various HR practices, based on the diversified natures of their subdimensions, may exert distinct impacts on creativity. Ability-enhancing HR practices and motivation-enhancing HR practices, via team efficacy and knowledge sharing respectively, were positively related to team creativity. By contrast, the effects of motivation-enhancing HR practices on team efficacy and, by extension, on creativity were not significant. Similarly, opportunity-enhancing HR practices were not related to either knowledge sharing or team creativity</li> </ul>	<ul style="list-style-type: none"> <li>Other countries and other cultural contexts</li> <li>Longitudinal studies</li> <li>Explore other mediators between HPWS and team creativity (especially the affective-based mechanisms, such as emotions or trust)</li> <li>Test the moderating effects of contextual factors such as cultural values</li> <li>Test positive and negative mechanisms of team efficacy and knowledge sharing</li> </ul>	<b>Team creativity</b> <b>7-point Likert Scale</b> (Using previous scales)	<b>Ability (aggregated to firm level)</b> 6 items <b>Motivation (aggregated to firm level)</b> 6 items <b>Opportunity (aggregated to team level)</b> 6 items <b>5-point Likert Scale</b> (Using previous scales – scale adapted towards teams in the organization, instead of individuals)	<b>Team efficacy</b> (Aggregated to team level) <b>Team knowledge sharing</b> (Aggregated to team level) <b>5-point Likert Scale</b> (Using previous scales) <b>Control variables</b> Team size, Task complexity

Malik, P., & Lenka, U. (2019). Exploring the impact of perceived AMO framework on constructive and destructive deviance: Mediating role of employee engagement.	2019	India	30 IT organizations (350 respondents)	To investigate the impact of perceived AMO framework enhancing HRM practices on destructive and constructive deviance through employee engagement. Furthermore, this model tests the mediating role of employee engagement between perceived AMO framework and destructive and constructive deviance.	Hypotheses  Confirmatory factor analysis  Structural equation modelling (SEM)  Mediation analysis  questionnaire	<ul style="list-style-type: none"> <li>Results revealed significant relationships between perceived AMO framework and destructive and constructive deviance, except for the relationship between perceived ability and destructive deviance. Furthermore, perceived AMO framework exhibited a significant positive relationship with employee engagement. Utilizing social exchange theory, results proposed partial mediation of employee engagement between perceived AMO framework and destructive and destructive deviance except for the relationship between perceived ability and destructive deviance, for which employee engagement exhibited full mediation</li> </ul>	<ul style="list-style-type: none"> <li>Longitudinal studies</li> <li>Responses from fellow employees and manager (instead of self-perception)</li> <li>Examine other mediators such as psychological capital</li> <li>Test the model in different contexts</li> <li>Use other statistical techniques (PLS, multiple hierarchical regression)</li> <li>Incorporate also organizational stress as an antecedent</li> </ul>	<b>Destructive deviance</b> (10 items) <b>Constructive deviance</b> (16 items) <b>7-point Likert Scale</b> <i>(Using previous scales)</i>	<b>Perceived AMO framework</b> (7 HRM practices – 28 items) <b>Ability</b> Human resource planning, training, and development <b>Motivation</b> Rewards and recognition, work-life balance, performance appraisal <b>Opportunity</b> Career opportunities, employee participation <b>7-point Likert Scale</b> <i>(Using previous scales)</i>	<b>Employee engagement</b> (9 items) (absorption, dedication, vigour) <b>7-point Likert Scale</b> <i>(Using previous scales)</i> <b>Control variables</b> Gender, age, tenure
Meuer, J. (2017). Exploring the Complementarities Within High-Performance Work Systems: A Set-Theoretic Analysis of UK Firms.	2017	UK	530 UK-based firms WERS	This article explores the internal nature of HPWS by integrating a configurational perspective of core, peripheral, and nonessential HR practices with a typology of complementarities	2 steps  1. Fuzzy set qualitative comparative analysis (fsQCA)  2. One-sample t-test	<ul style="list-style-type: none"> <li>I identify four frequently implemented HPWS consistently associated with high labour productivity: the incentive-based; the craft professional; the professionals; the low investment</li> <li>The complementarities within all HPWS combine pairs of core HR practices with sets of peripheral HR practices. Moreover, the complementarities within three of the four HPWS rely on firms' avoidance of implementing certain HR practices. The results suggest that the synergies of HPWS arise from efficient complementarities and virtuous overlaps and reveal the significance of achieving high performance by not implementing HR practices.</li> </ul>	<ul style="list-style-type: none"> <li>Study sector, or occupational groups, specific HPWS</li> <li>Study other outcomes (financial performance, labour turnover, innovation, employee satisfaction)</li> <li>Examine the mismatch between implementation level and architectural level (practice vs theory)</li> </ul>	<b>Labour productivity</b> Sales divided by the number of full-equivalent (FTE) workers at the firm	<b>HR Practices</b> <b>Ability</b> Recruitment and selection, training, and development <b>Motivation</b> Incentive compensation, performance appraisal, job security <b>Opportunity</b> Information sharing, employee participation, teamwork, job discretion *For the second step, I use t-tests to examine the contingent nature of the HPWS identified in the first step.	<b>Contingency</b> Firm size, firm age, low-cost strategy, Competition intensity, sector, main occupational group
Miao et al., (2021). High-performance work systems and key employee attitudes: the roles of psychological capital and an interactional justice climate.	2021	China	569 employees in 44 high-tech firms	We develop and test a moderated mediation model to explain how organization-level HPWS relate to individual employee work attitudes (job satisfaction and affective organizational commitment) that reflect well-being through the mediating mechanism of employees' PsyCap.	Hypotheses  Confirmatory factor analysis  Hierarchical linear Modelling (HLM)  Employees Self-reports	<ul style="list-style-type: none"> <li>HPWS were positively related to job satisfaction and affective commitment, and that these relationships were partially mediated by psychological capital</li> <li>Interactional justice climate strengthened the direct effect of HPWS on PsyCap and work attitudes as well as the indirect effects of HPWS on work attitudes.</li> </ul>	<ul style="list-style-type: none"> <li>Longitudinal studies</li> <li>More diverse sample of firms across different industries</li> <li>Mediators (interpersonal relationships)</li> <li>Explore employees' own perceptions</li> <li>Replicate the study at work unit level (instead of workplace)</li> </ul>	<b>Job satisfaction</b> 6 item scale <b>Affective organizational commitment</b> 6 item scale	<b>HPWS</b> (7 core HRM practices -not disaggregated) 22 items see appendix <b>Ability</b> Extensive training, employee selection <b>Motivation</b> Empowerment, results-oriented performance appraisal, employee competition, rewards management <b>Opportunity</b> Information sharing <b>7-point Likert Scale</b> <i>(Using previous scales)</i>	<b>Psychological capital</b> (Using previous Psychological Capital Questionnaire PCQ) 4 dimensions aggregated in one index. <b>Interactional justice climate</b> (Adaptation of previous 9 items scale) <b>Control variables</b> Individual - Gender, age, educational level, tenure Organizational size and age.
Morales-Sanchez, R., & Pasamar, S. (2019). How to improve organisational citizenship behaviour by combining ability, motivation, and opportunity The moderator role of perceived organisational support.	2019	Spain	HR managers of 130 hotels and 87 financial firms	To explore the relationship between the ability, motivation and opportunity model, and organizational citizenship behaviour (OCB) as a result variable, using the perceived organizational support (POS) as a moderator of this relationship.	Hypotheses  Confirmatory factor analysis  Regression analysis  Hierarchical regression analysis  questionnaire	<ul style="list-style-type: none"> <li>The results reveal that ability and motivation significantly influence the level of OCB. POS also has a notable direct effect on OCB, as well as moderating in the relationship between opportunity and OCB</li> </ul>	<ul style="list-style-type: none"> <li>Including companies from different industries</li> <li>Responses from other managers and employees</li> <li>Analyse the possible influence of the complexity and dynamism of the environment on individual extra-role behaviours</li> <li>Consider other variables as moderators of HRM-OCB, or direct antecedents of OCB (organizational culture, national culture, perceived job influence, ethical culture, organizational learning)</li> </ul>	<b>OCB</b> <b>5-point Likert Scale</b> <i>(Using previous scales)</i>	<b>Ability</b> Training, employee selection <b>Motivation</b> Pay rises based on job performance, individual-performance outcomes (bonus, other), promotion opportunities <b>Opportunity</b> Communication regarding company goals; operating performance; financial performance; competitive performance <b>5-point Likert Scale</b> <i>(Using previous scales)</i>	<b>Perceived organizational support (POS)</b> <b>5-point Likert Scale</b> <i>(Using previous scales)</i> <b>Control variables</b> Firm size, activity sector
Muisyo et al., (n.d.). Implications of GHRM on organisational citizenship behaviour: the mediating role of enablers of green culture.	2021	Taiwan	421 Manufacturing firms (>100 employees)	To examine how firms can build collective organizational citizenship behavior towards the environment (OCBE) from green human resource management (GHRM) practices. The study tests how the three main aspects of GHRM (green abilities, motivation, and opportunities, give rise to the enablers of green culture (EGC). The study further tests how each of the EGC (leadership emphasis, message credibility, peer involvement and employee empowerment) leads to the development of OCBE at the organizational level of analysis.	Hypotheses  Confirmatory factor analysis  Path analysis (maximum likelihood estimation method)  questionnaire	<ul style="list-style-type: none"> <li>GHRM practices that include developing green abilities, green motivation and green opportunities support the development of the EGC. The EGC include leadership emphasis, message credibility, peer involvement and employee empowerment. It was, however, found that green abilities do not support the development of message credibility. It was further found the EGC lead to the development of collective OCBE except for peer involvement</li> <li>Table 3, 4</li> </ul>	<ul style="list-style-type: none"> <li>Bigger sample size</li> <li>Alternative sources of data and measurements</li> <li>Longitudinal studies</li> <li>Other sectors and other countries</li> </ul>	<b>Organizational citizenship behaviour towards the environment (OCBE)</b> <b>5-point Likert Scale</b> <i>(Using previous scales)</i>	<b>Green abilities</b> Environmental selection, environmental training <b>Green motivation</b> Specific goals, assessment, individual performance appraisal, rewards, recognition <b>Green opportunities</b> Employee involvement, enable acquiring knowledge <b>5-point Likert Scale</b> <i>(Using previous scales)</i> See appendix	<b>Enablers of green organisational culture. (EGC)</b> <b>Leader emphasis</b> <b>Message credibility</b> <b>Peer involvement</b> <b>Employee empowerment</b> <b>5-point Likert Scale</b> <i>(Using previous scales)</i> See appendix



Nguyen et al., (2020). The impact of human resource management activities on the compatibility and work results.	2020	Vietnam	350 companies (quantitative) 10 experts	This research focuses on determining the impact of human resource management activities on the compatibility and work results of employees of Ho Chi Minh Stock Exchange (HOSE) listed companies	Qualitative & quantitative  Hypotheses  Exploratory and Confirmatory factor analysis (EFA, CFA)  Structural equation modelling (SEM)  questionnaire	<ul style="list-style-type: none"> <li>The results of the research clearly indicate that human resource management (HRM) activities are measured through improving the ability, improving the motivation, and improving the opportunity.</li> <li>While compatibility is measured through suitability, connection and sacrifice; whereby HRM activities of ability improvement have a positive effect on the job suitability and connection; HRM activities of motivation improvement have a positive effect on the job suitability, connection and sacrifice; and HRM activities of opportunity improvement have a positive effect on the job suitability, sacrifice and connection; Finally, the job suitability, sacrifice and connection positively affect the work results of employees.</li> </ul>	N/A	<b>Work result</b> Company achievements (business plans, goals, expected growth) (Using previous scales) See table 1	<b>Ability</b> Recruitment, training, performance assessment <b>Motivation</b> Pay rises based on job performance, individual-performance outcomes (bonus, other), promotion opportunities <b>Opportunity</b> Communication regarding company goals; operating performance; financial performance; competitive performance (Using previous scales) See table 1	<b>Job suitability</b> <b>Job sacrifice</b> <b>Job connection</b> (Using previous scales) See table 1
Obeidat et al., (2016). The link between high performance work practices and organizational performance: Empirically validating the conceptualization of HPWP according to the AMO model.	2016	Jordan	118 financial and manufacturing firms (>100 employees)	To better understand the relationship between high-performance work practices (HPWP) and organizational performance through a multi-dimensional model of the relationship between HPWP and performance, which conceptualizes HPWP according to the ability, motivation and opportunity (AMO) framework. HPWP are conceptualized as HR practices capable of enhancing the AMO of employees to contribute to organizational performance	Hypotheses  Confirmatory factor analysis  Structural equation modelling (SEM)  PLS  questionnaire	<ul style="list-style-type: none"> <li>The findings generate support for the link between HPWP and OP and confirm the utility of the AMO model for conceptualizing HPWP and their impact on organizational performance.</li> </ul>	<ul style="list-style-type: none"> <li>Longitudinal research</li> <li>Use objective measures</li> <li>Study the interactions between each of the AMO dimensions</li> <li>Explore HPWP and performance link from different groups of employees</li> </ul>	<b>Perceived overall organization performance</b> evaluate performance in objective terms (such as return on equity, sales growth, and profitability) through the perception of managers 7-point scale (Using previous scales)	<b>Ability</b> Staffing (job analysis, recruitment, and selection), training, development <b>Motivation</b> Performance management, compensation <b>Opportunity</b> Communication, participation 7-point scale (Using previous scales)	<b>Control</b> Company size, company age, company ownership, sector, employee turnover rate, employee absence rate, line manager HR-related responsibility
Obeidat, S. M. (2017). An examination of the moderating effect of electronic-HRM on high-performance work practices and organisational performance link.	2017	Jordan	118 financial and manufacturing firms (>100 employees)	To examine electronic-HRM (e-HRM) as a contingency factor moderating the relationship between HPWP and organizational performance.	Hypotheses  Composite reliability (CR)  PLS  questionnaire	<ul style="list-style-type: none"> <li>This study shows that both HPWP and e-HRM have a significant positive influence on organizational performance. The results also revealed that e-HRM moderates the HPWP-performance link</li> </ul>	<ul style="list-style-type: none"> <li>Longitudinal research</li> <li>Other sectors and other countries</li> <li>Investigate other moderators</li> <li>Qualitative studies</li> <li>Use employee-based surveys (instead of HR manager)</li> </ul>	<b>Perceived financial performance</b> Return on equity, return on assets, sales growth, market share, overall performance 7-point scale (Using previous scales) See table 1	<b>HPWP combined into one dimension</b> <b>Ability</b> Extensive training, recruitment, employment tests, staffing process <b>Motivation</b> Promotion based on merit, performance appraisal, pay level relative <b>Opportunity</b> Participation, information, attitude surveys, self-directed work teams 7-point scale (Using previous scales) See table 1	<b>e-HRM implementation</b> 9 items related to HR activities (training, recruitment, communication, compensation, performance management) 7-point scale (Using previous scales) See table 1 <b>Control</b> company ownership, sector
Ollo-López et al., (2016). Disentangling the relationship between high-involvement-work-systems and job satisfaction.	2016	Spain	10112 Spanish workers	The purpose of this paper is to study how high-involvement work systems (HIWS) affect job satisfaction, and tries to disentangle the mechanisms through which the effect occurs	Hypotheses  Confirmatory factor analysis  Regression models  2001 to 2004 Quality of working life survey	<ul style="list-style-type: none"> <li>Empirical results show that HIWS results in higher levels of effort, higher wages, and perceptions of a more interesting job. Moreover, greater involuntary physical effort reduces job satisfaction while higher wages, greater voluntary effort, involuntary mental effort and having an interesting job increase job satisfaction. The net effect of these opposing forces on job satisfaction is positive</li> <li>The results indicate that in general HIWS are significantly associated with more interesting jobs, involuntary and voluntary effort, and wages. Few exceptions to this general pattern are the non-significant effect of communication variables on involuntary physical effort, the lack of a significant effect of autonomy on involuntary mental effort, and the lack of relationship between job rotation and wages</li> <li>All HIWS except job rotation have a positive association with job satisfaction. Job rotation shows a negative significant association with job satisfaction. Upward communication shows the strongest effect</li> <li>About the effects of mediating variables on JS, we can see that the estimated coefficient of interesting job on JS is positive. Regarding effort dimensions, we can see that not all effort dimensions have the same effect on job satisfaction. Thus, while involuntary physical effort shows a negative association with job satisfaction, voluntary and involuntary mental show a negative one</li> </ul>	<ul style="list-style-type: none"> <li>The use of secondary data source limits the type of measures. Also, they do not have access to personal traits</li> <li>Longitudinal studies</li> <li>Other countries → It must be cautious to generalize the results if only one country is under study</li> </ul>	<b>Job satisfaction</b> Single factor based in various aspects (pay, working conditions, working environment & organization of the work) 10-point scale See table 1	<b>HIWS (analysed as a bundle)</b> job rotation, autonomous teams, job autonomy and communication (downward and upward) 5-point scale & dichotomous (Using previous scales) See table 1	<b>Mediating variables</b> Interesting job Effort (involuntary physical effort, involuntary mental effort, voluntary effort), Wages <b>Control (3 sets)</b> Employee characteristics, organizational characteristics See table 1
Pham et al., (2020). The role of green human resource management in driving hotel's environmental performance: Interaction and mediation analysis.	2020	Vietnam	220 managerial employees (hospitality)	the study bridges this research gap by extending the Ability-Motivation-Opportunity theory to explore the direct, indirect, and interactive roles of GHRM practices	Hypotheses  SMART-PLS  Correlation matrix  Structural model  questionnaire	<ul style="list-style-type: none"> <li>(1) training and employee involvement are critical tools in directly stimulating employee commitment and organizational citizenship behaviour towards the environment (OCBE), and hotels environmental performance.</li> <li>(2) OCBE plays an essential role in mediating the effects of training and performance management on environmental performance.</li> <li>(3) the vital interaction of training and employee involvement significantly strengthens environmental performance. However, unexpected results are found: (1) performance management is an unimportant consideration in analysis of direct and interactive influences and (2) employee environmental commitment does not mediate the GHRM-environmental performance relationship</li> </ul>	<ul style="list-style-type: none"> <li>Additional green policies such as rewards, recruitment, organizational culture, and union roles need to be considered in further research</li> <li>collect data from non-managerial employees</li> <li>Other countries and industries</li> </ul>	<b>CEP (corporate environmental performance)</b> <b>OCBE</b> <b>EEC (employee environmental commitment)</b> (Using previous scales)	<b>Green training (A)</b> <b>Green performance management (M)</b> <b>Green employee involvement (O)</b> (Using previous scales)	N/A

Raineri, A. (2017). Linking human resources practices with performance: the simultaneous mediation of collective affective commitment and human capital.	2017	Chile	216 business units at 134 firms (different sectors)	A multiple mediation analysis is used to test employee perceptions of subsets of HPWS practices, which emphasize the enhancement of employees' AMO as predictors of business units' performance, when mediated by human capital and motivational paths	Hypotheses  Factor analysis  Common method variance (market variable technique)  Average inter-item correlations  Intra-class correlation (ICC)  questionnaire	<ul style="list-style-type: none"> <li>Results indicate that personnel selection, performance evaluation and training, job descriptions, and empowerment practices make simultaneous contributions to the human capital and affective commitment paths. The partial mediation effects observed suggests that additional mechanisms contributing to the HPWS-performance relationship should be explored. However, compensation and incentives practices only contribute to the motivational path, while the human capital path and direct effects are non-significant. Results support the complementarity of both mediation mechanisms, the differential effects of subsets of HR practices on the mediation paths, and the significance of these effects at a business unit aggregate level of analysis.</li> </ul>	<ul style="list-style-type: none"> <li>Longitudinal studies</li> <li>Larger sample to confirm the effects</li> <li>Consider institutional constraints that might influence the HPWS-Performance relationship</li> </ul>	<b>Perceptual measure of business unit performance</b> 5 items measuring respondent's perceptions about performance, quality, productivity, customer satisfaction, new product/service development and manager-employees relation 6-point scale (Using previous scales)	<b>HPWS</b> (24 item scale covering the 3 AMO dimensions) <b>Ability</b> Selection, evaluation & training. <b>Motivation</b> Job description, compensation & incentives (bonus based on group or individual performance, profits, productivity) <b>Opportunity</b> Empowerment practices (participation, involvement in decision, communication, complaint process, suggestion, teamwork) 5-point scale (Using previous scales) See appendix 1	<b>Business units' human capital</b> 2 items 6-point scale (Using previous scales) <b>Affective commitment</b> Control Firm size Unit size Organizational age
Rayner, J., & Morgan, D. (2018). An empirical study of 'green' workplace behaviours: ability, motivation, and opportunity.	2018	Australia	394 employees from 5 firms of 3 sectors (power industry, tertiary education, water supply)	This paper assesses employees' environmental knowledge as well as self-perceptions of ability, motivation, and opportunity (AMO) to practice green behaviours by operationalizing the AMO framework towards a pro-environmental agenda.	Hypotheses  One-way ANOVA  Pearson product-moment correlation  Ordinary Least Square regression (OLS)  questionnaire	<ul style="list-style-type: none"> <li>Key findings show that pro-environmental AMO are positively associated with green behaviours and that these are more prevalent at home than in the workplace. Further, line managers moderate the relationship between pro-environmental AMO and green behaviour although not the relationship between environmental knowledge and green behaviour</li> </ul>	<ul style="list-style-type: none"> <li>Other countries and sectors</li> <li>Longitudinal studies</li> <li>More items in each AMO domain</li> <li>More mediators</li> </ul>	<b>Green work behaviours</b> <b>Green home behaviours</b> See appendix 1	<b>Ability</b> Self-ability, environmentally friendly initiatives bring benefits to my workplace <b>Motivation</b> I apply, I do not apply environmentally friendly initiatives in my workplace <b>Opportunity</b> I have opportunities to apply environmentally friendly initiatives in my workplace 6-point scale See appendix 1	<b>Environmental knowledge</b> See appendix 1 Control N/A
Rincon-Roldan, F., & Lopez-Cabrales, A. (2021). Linking organisational values and sustainability: the role of AMO practices.	2021	Spain	124 cooperative companies	To analyse the link between the values that govern the functioning of cooperatives and their sustainability. The authors propose that this relationship is mediated by AMO practices, which generate different behaviours and attitudes in their employees, thus strengthening the message of sustainable management that the directors of this kind of companies aim to transmit	Hypotheses  Partial least squares structural equation modelling (PLS-SEM)  questionnaire	<ul style="list-style-type: none"> <li>This work empirically demonstrates that the perceived support, respect, and responsibility values are strongly related to sustainability, and that ability and opportunity-enhancing practices mediate the association of perceived support and responsibility with the sustainability of cooperatives</li> </ul>	<ul style="list-style-type: none"> <li>Explore new values related to sustainability such as altruism, empathy, and reciprocity</li> <li>Other sector and countries</li> <li>Other type of companies (rather than cooperatives)</li> <li>New mediation variable (organizational identification)</li> </ul>	<b>Sustainability</b> 3-dimensional version: social, economic, environmental 26 items 5-point scale (Using previous scales)	<b>AMO model</b> Scale including 3 blocks of AMO, proposed by Wright et al (2005) 15 items (not specified) 5-point scale (Using previous scales)	<b>Organizational values</b> Perceived support -17 items Respect - 5 items Responsibility - 10 items 5-point scale (Using previous scales)
Rizvi, Y. S., & Garg, R. (2021). The simultaneous effect of green ability-motivation-opportunity and transformational leadership in environment management: the mediating role of green culture.	2021	India	150 top and middle managers in Indian oil and gas companies	Green human resource management (GHRM) and green transformational leadership (GTL) coupled with Green Culture (GC) is considered a central aspect in improving the organization's environmental performance (EP). Based on this argument, this study has shown how GHRM strategies as studied under the heading - green ability, motivation, and opportunity (GAMO) and GTFL can help in improving the EP of organizations. Studies have highlighted culture as an important mediator, we have therefore explored the mediating effect of green culture between GAMO and EP and between GTFL and EP.	Hypotheses  Composite reliability (CR)  Exploratory factor analysis (EFA)  Structural equation modelling (CB-SEM)  questionnaire	<ul style="list-style-type: none"> <li>The research identifies that GAMO and GTFL positively influence the EP of organizations. Moreover, GC was found to have a partial mediating effect between both GAMO and EP and GTFL and EP</li> </ul>	<ul style="list-style-type: none"> <li>Longitudinal studies</li> <li>Other countries</li> <li>Gather dependent and independent variables from other sources, to reduce bias</li> <li>Use objective measurement techniques</li> <li>Examine the role of transactional leadership or ethical leadership</li> </ul>	<b>Environmental performance</b> (Using previous scales) See sample items	<b>Green ability, motivation, and opportunity</b> Green Ability Green Motivation Green Opportunity (Using previous scales) See sample items	<b>Green culture</b> To capture organizations' adaptability, mission, involvement, consistency <b>Green transformational leadership</b> (Using previous scales) See sample items <b>Control variables</b> Experience Position in the organization
Salas-Vallina et al., (2021). Well-being in times of ill-being: how AMO HRM practices improve organizational citizenship behaviour through work-related well-being and service leadership.	2021	Spain	214 employees of public hospital	To examine the effect of ability, motivation, and opportunity (AMO) practices on organizational citizenship behaviour (OCB), in medical staff working in specialized units. In addition, we check the mediating role of work-related well-being, understood as engagement, trust and exhaustion, in the relationship between AMO practices and OCB. Furthermore, the moderating role of service leadership is analysed in the relationship between AMO practices and work-related well-being.	Hypotheses  Herman's single factor test Confirmatory factor analysis  Structural equation modelling (SEM)  questionnaire	<ul style="list-style-type: none"> <li>Results provide evidence that AMO practices have a positive effect on OCB. Further, work-related well-being mediated the effect of AMO practices on OCB. In addition, service leadership exerted a moderating role between AMO practices and work-related well-being</li> </ul>	<ul style="list-style-type: none"> <li>Examine the isolate effect of AMO practices and their effect on the 3 well-being dimensions and OCB</li> <li>Consider new outcome variables (patient satisfaction, performance)</li> <li>Longitudinal studies (considering also different stages in the careers of medical staff)</li> </ul>	<b>OCB</b> 21 items 7-point scale (Using previous scales)	<b>HRM practices</b> (at individual level) 8 dimensions -12 items <b>Ability</b> training <b>Motivation</b> Opportunities for development <b>Opportunity</b> participation in decision-making, communication 7-point scale (Using previous scales)	<b>Service leadership</b> (4 it.) <b>Engagement</b> (3 it.) <b>Exhaustion</b> (9 it.) <b>Trust</b> (7 it.) 7-point scale (Using previous scales) <b>Control variables</b> Employee age Gender Hours worked per week Group size (Based on previous studies)
Schouteten et al., (2021). More roads lead to rome. Hr configurations and employee sustainability outcomes in public sector organizations.	2021	NL	Employees in 30 Dutch public sector organizations	To provide empirical evidence for synergistic effects and equifinality in the link between sustainable HRM practices and employee sustainability outcomes. Building on the AMO model, this study adopts a configurational approach to unveil how sustainable HRM practices, in various combinations and in different ways, can impact employee sustainability outcomes (commitment and job satisfaction).	Cronbach alpha, AVE, CR  fsQCA (necessity, truth table, sufficiency) See appendix  2011 to 2015 Worker satisfaction survey	<ul style="list-style-type: none"> <li>The findings reveal that combinations of various AMO-enhancing practices are especially conducive to commitment and job satisfaction. Moreover, aligning these practices with work context factors (transformational leadership style and low work pressure) can lead to relatively high levels of commitment and job satisfaction. This study indicates that configuration matters and that there is not one best way to achieve employee sustainability outcome</li> </ul>	<ul style="list-style-type: none"> <li>Including other conditions (other HR practices) in the analysis may result in different solutions</li> <li>Include financial and ecological sustainability targets</li> <li>Other contexts</li> <li>Longitudinal studies</li> <li>Study other organizational factors (market characteristics, collective agreements, etc.)</li> <li>Examine other paths to success</li> </ul>	<b>Commitment</b> Reasons to leave, reasons to stay, positive things in comparison to other organizations <b>Job satisfaction</b> General satisfaction with the organization, with the job, with the content of the job 5-point scale	<b>HR practices</b> - HR practices representing AMO dimensions <b>Ability</b> Training and development <b>Motivation</b> Fair compensation, appraisal management <b>Opportunity</b> Job autonomy, social support, voice 5-point scale	<b>Contextual factors</b> Transformational leadership Absence of high workload 5-point scale

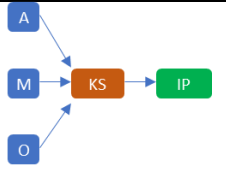
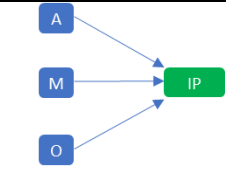
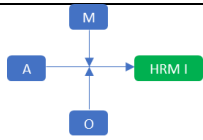
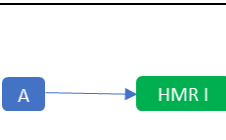
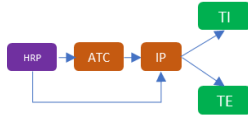
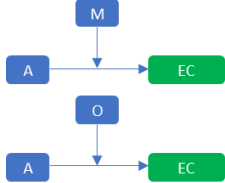

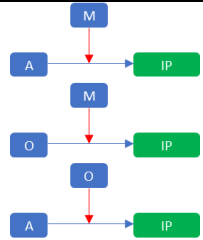
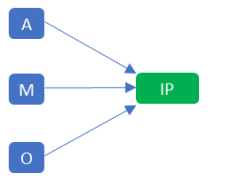


Shahzad et al., (2019). Unpacking the relationship between high-performance work systems and innovation performance in SMEs.	2019	Pakistan	237 companies with a formal HR function	To explore the black box between high-performance work systems (HPWS) and innovation performance in small- and medium-sized enterprises (SMEs). To examine the mediating roles of innovation-specific ability, motivation, and voice behaviors between HPWS and SMEs' innovation performance	Hypotheses Exploratory factor analysis (EFA) Harman's one factor test Regression analysis  questionnaire	<ul style="list-style-type: none"> <li>Findings indicate that human capital, motivation, and employee voice fully mediate the relationship between HPWS and innovation performance in SMEs</li> </ul>	<ul style="list-style-type: none"> <li>Longitudinal research</li> <li>Decompose HPWS in their subdimensions (Ability-enhancing practices, etc.) to study the independent impact on human capital, motivation, voice, and innovation</li> <li>Different context and countries</li> </ul>	<b>Innovation performance</b> Improvement of new processes, products/services, and administrative practices (Using previous scales)	<b>HPWS – 11 items</b> aggregated in a single HPWS <b>Ability</b> Formal selection, training, and development <b>Motivation</b> Compensation, performance management practices <b>Opportunity</b> Participation, information sharing, grievance handling (complaint system) (Using previous scales) See appendix	<b>Human capital</b> KSA of employees to undertake creativity and innovation <b>Motivation</b> Inclination of employees to come up with innovative ways <b>Voice opportunity</b> Employees believe that their managers provide opportunities to make suggestions (Using previous scales) <b>Control variables</b> <i>Individual:</i> Gender, experience, qualification, <i>Organization:</i> age, type, size
Shin et al., (2018). Do high-involvement HRM practices matter for worker creativity? a cross-level approach.	2018	South Korea	3316 production-line workers from 240 manufacturing companies	To investigate how and when HRM practices influence work creativity	Hypotheses Hierarchical linear modelling  Human Capital corporate panel (HCCP)	<ul style="list-style-type: none"> <li>A bundle of HRM practices was positively related to individual worker creativity</li> <li>Learning orientation strengthened the positive relationship between HRM practices and worker creativity</li> <li>Intrinsic job motivation mediated these relationships</li> </ul>	<ul style="list-style-type: none"> <li>Create and validate measures of worker creativity to more rigorously test how HRM practices affect worker creative performance</li> <li>Consider how the practices are implemented within each team</li> <li>Different sectors or industry</li> <li>Longitudinal research</li> <li>Look into how and when individual-level performance emerges into organisational-level performance</li> </ul>	<b>Worker creativity</b> 5-point scale (Using previous scales)	<b>HRM dimensions – additive index</b> <b>Ongoing feedback</b> Feedback <b>Broader job design</b> Job rotation, job enrichment <b>Egalitarian codes</b> Information, democratic culture, respecting workers <b>Extensive trainings</b> On the job training, coaching, investment 5-point scale See table 1 HRM-HCCP relationship	<b>Intrinsic job motivation</b> <b>Learning orientation</b> 5-point scale (Using previous scales) <b>Controls</b> <i>Organization:</i> firm age, industry <i>Individual:</i> gender, education level, technological competence, education type, job position
Siddique et al., (2019). The role of relational coordination in the relationship between high-performance work systems (HPWS) and organizational performance.	2019	Pakistan	120 branches of a large financial services provider	Relational coordination, HPWS-OP link, AMO, opportunity, six-most used practices, proximal-distal indicators of performance, work social relations To look at the role relational coordination might play in understanding the relationship between HPWS and organizational performance	Hypotheses Exploratory factor analysis Interrater agreement (IRA) Regression models  questionnaire & data from the bank	<ul style="list-style-type: none"> <li>Analysis shows relational coordination to be a mediating variable between HPWS and branch performance. Relational coordination is also a mediating variable for each of the three component parts of HPWS: ability-enhancing, motivation-enhancing, and opportunity-enhancing HR practices.</li> </ul>	<ul style="list-style-type: none"> <li>Undertake studies in a broader range of appropriate settings regarding the attributes and attitudes of individual employees</li> <li>To develop the O side of the AMO model to incorporate a more refined understanding both of social relations and of the more structural aspects of work organization</li> </ul>	<b>Workplace performance</b> Deposits x employee Ratio of advances to deposit	<b>HR practices – including 5 of Top 6</b> <b>Additive approach aggregating practices into and index</b> <b>Ability</b> Training, job description <b>Motivation</b> Job security, contingency compensation, performance appraisal <b>Opportunity</b> Employee participation, information sharing 5-point scale (Using previous scales) See appendix	<b>Relational coordination</b> Unitary index based on the interactions between the 4 main groups of employees: operations, cash, credit, management 5-point scale (Using previous scales) See appendix <b>Controls</b> Age, qualification, experience, gender, length of service
Singh et al., (2020). Green innovation and environmental performance: The role of green transformational leadership and green human resource management.	2020	UAE	309 manufacturing sector SMEs (COO, HR manager, Production manager)	To examine how green human resource management interplays on to the linkages amongst green transformational leadership, green innovation, and environmental performance	Hypotheses Confirmatory factor analysis Structural equation modelling (SEM)  Questionnaire	<ul style="list-style-type: none"> <li>Results of the study suggest that green HRM practices mediates the influence of green transformational leadership on green innovation. We also found that green HRM indirectly through green innovation influences firm's environmental performance. Overall, the findings of our study support all hypotheses of direct and indirect effects and have several theoretical and practical implications. Finally, our study significantly advances theory and suggests that HRM-performance relationship neither depends upon the additive effect of green transformational leadership and green innovation as antecedent and mediator, respectively, nor on their interactive effect but a mix of both combinational forms (i.e., additive and interactive) to affect firm environmental performance</li> </ul>	<ul style="list-style-type: none"> <li>Extend the study to the non-manufacturing sector SMEs in UAE</li> <li>Include moderators (employee's environmental beliefs and values)</li> <li>Investigate external factors relates to the adoption of the environmental strategy in SMEs</li> <li>Sample perceptions of both internal and external stakeholders</li> </ul>	<b>Environmental performance</b> 5 items <i>Reduce costs</i> <i>Reduce lead times</i> <i>Improve quality</i> <i>Improve company reputation</i> <i>Reduce waste</i> See appendix 1b 7-point scale (Using previous scales)	<b>Green HRM</b> 13 items scale <b>Green abilities (GABL)</b> Staffing, training <b>Green motivation (GMOT)</b> Performance appraisal, rewards <b>Green opportunity (GOPP)</b> Employee involvement, teamwork, team-meetings 7-point scale (Using previous scales) See appendix 1a	<b>Green transformational leadership</b> 6 items See appendix 1a <b>Green innovation</b> 7 items See appendix 1b 7-point scale (Using previous scales)
Song et al., (2020). The effects of high-involvement work systems and shared leadership on team creativity: A multilevel investigation.	2020	China	668 employees from 112 teams in 41 organizations	To investigate the effects of HIWS on team creativity in terms of AMO theory and a team input–process–output model	Hypotheses ANOVA Confirmatory factor analysis Common method bias test Multi-level path analysis  Questionnaire	<ul style="list-style-type: none"> <li>The results reveal that HIWS are positively related to team creativity, not only directly, but also indirectly through a sequential mediating mechanism of involvement climate and shared leader-ship.</li> <li>We argue that when employees are placed in an autonomous work environment underpinned by HIWS, they will be more likely to be involved in creative activities and engage in mutual influence behaviours in their work teams, and lead each other to achieve a higher level of creativity</li> </ul>	<ul style="list-style-type: none"> <li>Longitudinal research</li> <li>Explore other mediators from other perspectives</li> <li>Explore other contextual factors</li> </ul>	<b>Team creativity</b> 4 items scale 5-point scale (Using previous scales)	<b>HIWS (additive index 11-items scale)</b> <b>Ability</b> Selection, off-the-job training <b>Motivation</b> Profit-sharing plan, performance-based pay <b>Opportunity</b> Teamwork, employee involvement, financial information, participation, job rotation 3 options (0=none, 1=part of 2=all of them) (Using previous scales) See appendix	<b>Involvement climate</b> 18 items scale <b>Shared leadership</b> 7 items scale 5-point scale (Using previous scales) <b>Control variables</b> Team size

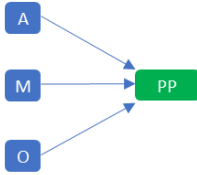
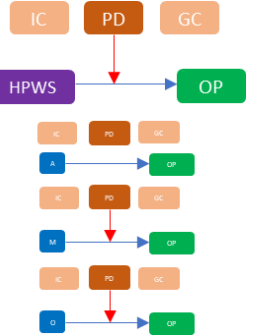
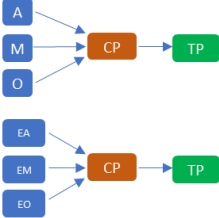
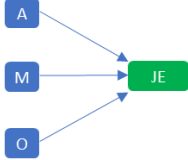
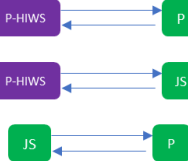
Tarifa Fernández et al., (2021). Examining the moderating role of HIHRP in the relationship between external integration and productivity.	2021	Spain	101 firms Agri-food sector (Key informants: manager, director, operation manager, or HR manager)	Based on the human resource (HR) and supply chain integration (SCI) literature, this paper aims to argue that HIHRP work as a complementary capability for SCI, and thus, HIHRP moderates the relationship between SCI and firm productivity. This moderating role is analysed through the following HIHRP dimensions: ability-enhancing, motivation-enhancing, and opportunity-enhancing practices framework.	Hypotheses  Confirmatory factor analysis  Common method bias (Harman's single factor test)  Ordinary least square regression  Questionnaire	<ul style="list-style-type: none"> <li>The results support that HIHRP has a moderating effect on the SCI/productivity relationship. However, these results are only significant in the case of supplier integration</li> </ul>	<ul style="list-style-type: none"> <li>Extend the study to a broader population of firms, different levels, context, industries...</li> <li>Consider other dependent variables (operational performance such as delivery, flexibility, and quality performance)</li> <li>Examine other variables (innovation, social capital), and other moderators (top management influence)</li> <li>Longitudinal studies</li> </ul>	<b>Productivity</b> Logarithm of the gross operating revenue divided by the number of employees (Own elaboration. See table 2)	<b>HIHRP</b> Ability Staffing, training <b>Motivation</b> Incentive-based compensation, performance appraisal <b>Opportunity</b> Job definition, employee participation, communication 5-point scale (Using previous scales. See table 2)	<b>Customer integration</b> <b>Supplier integration</b> Respondents asked to rate the extent to which statements regarding information exchange and involvement with both suppliers and customers applied to their firm 5-point scale (Using previous scales. See table 2) <b>Control variables</b> Size Age Internationalization level
Tay et al., (2017). The power of ability-motivation-opportunity enhancing human resource management practices on organizational ethical climate. International	2017	Malaysia	74 construction companies (Respondent: manager director or HR manager)	This paper examined ability-, motivation- and opportunity-enhancing human resource management (HRM) practices to achieve organizational ethical climate.	Hypotheses  Composite reliability (CR) Average variance extracted (AVE) Variance inflation factor (VIF)  Structural equation modelling (SEM)  Questionnaire	<ul style="list-style-type: none"> <li>The findings revealed that ability-enhancing HRM practices was related to organizational ethical climate, while motivation- and opportunity-enhancing HRM practices did not influence organizational ethical climate. This denoted that ability enhancing HRM practices played an important role in promoting organizational ethical climate of construction companies in Malaysia</li> </ul>	<ul style="list-style-type: none"> <li>Examine this study in different countries and businesses</li> <li>Larger sample to confirm the findings</li> <li>Assuring confidentiality (the representative preferred to choose the socially desirable answers rather than expressing their opinions honestly)</li> <li>Longitudinal studies</li> </ul>	<b>Organizational ethical climate</b> 12 items scale (Egoist-local; benevolent-local; principal-local ethical climates of the organization) 5-point scale (Using previous scales)	<b>HRM practices</b> (adapted form Guerci et al. (2015)) 18 items <b>Ability</b> <b>Motivation</b> <b>Opportunity</b> 5-point scale (Using previous scales)	N/A
Tensay, A. T., & Singh, M. (2020). The nexus between HRM, employee engagement and organizational performance of federal public service organizations in Ethiopia.	2020	Ethiopia	340 federal employees of government organizations	Drawing on the AMO Model and SET, the present study examined the effect of HRM System on Employee Engagement and Organizational Performance. Likewise, this study tested the intervening effect of Employee Engagement in the HRM-performance link	Hypotheses  Exploratory factor analysis AVE, CR  ANOVA  Structural equation modelling (SEM)  Questionnaire	<ul style="list-style-type: none"> <li>The finding of the study shows that there is a positive and significant relationship between HRM, Employee Engagement and Organization Performance. Besides, employee engagement partially mediated the link between HRM and Performance. Concerning the effect of the individual HR practices, the present study revealed a positive and differing effect of HR practices on both engagement and performance although the magnitude effect is smaller than, the combined effect of the HR practices together. Moreover, Autonomy was identified as an important driver of both engagement and performance</li> </ul>	<ul style="list-style-type: none"> <li>Longitudinal studies</li> <li>Collect data from different sources to avoid common method variance</li> <li>Use objective measures, instead of subjective</li> <li>Conduct multi-level analysis (both organizational and individual levels) to explore the HRM-performance link</li> <li>Consider other antecedents such as leadership or working climate</li> <li>Consider the culture and different context in measuring the contribution of HRM to the performance.</li> </ul>	<b>Organizational Performance</b> 12 items representing productivity, quality, goal attainment, customer satisfaction 5-point scale (Using previous scales)	<b>HRM</b> 31 items <b>Ability</b> Recruitment, selection, training, development <b>Motivation</b> Performance appraisal, compensation, reward <b>Opportunity</b> Autonomy, employee participation 5-point scale (Using previous scales)	<b>Employee engagement</b> 9 items scale 5-point scale (Using previous scales) <b>Control variables</b> Demographic characteristics: Gender, age, education, length of service
Tian et al., (2016). Staying and performing: How human resource management practices increase job embeddedness and performance.	2016	China	197 paired responses (supervisor-subordinate) 8 units of a transportation company	To empirically examine the effect of human resource management (HRM) practices on employees' organizational job embeddedness and job performance	Hypotheses  Multiple linear regression model  Confirmatory factor analysis  Structural equation modelling (SEM)  Questionnaire	<ul style="list-style-type: none"> <li>Results indicated that HRM practices contribute to the creation and development of embeddedness, and the improvement of job performance. The job embeddedness components of fit, links and sacrifice were found to mediate the HRM-job performance relationship.</li> </ul>	<ul style="list-style-type: none"> <li>Longitudinal studies</li> <li>Add off-the-job embeddedness</li> <li>Explore other industries and jobs</li> <li>Make more fine-grained assessments of the potential synergistic, additive, and substitutive relationships between HRM practices</li> <li>Explore other outcomes (individual and organizational) in different contexts</li> </ul>	<b>Job performance</b> Supervisors rated their employees' level of job performance using six items 7-point scale (Using previous scales) See Appendix 1	<b>HRM practices</b> (employees' perceptions) 23 items <b>Ability</b> Training, recruitment, feedback on job performance <b>Motivation</b> Higher wages than other companies, merit-based compensation, performance appraisal, extra-benefits <b>Opportunity</b> Teamwork, participation in decision-making processes, decentralized participation processes, information-sharing, communication, autonomy 7-point scale (Using previous scales) See Appendix 1	<b>Job embeddedness (organizational)</b> 9 items Fit, links, sacrifice 7-point scale (Using previous scales) See Appendix 1 <b>Control variables</b> Demographic characteristics: Tenure, Gender, education level
Tuuli, M. M., & van Rhee, H. (2021). How Ability, Motivation, and Opportunity Drive Individual Performance Behaviors in Projects: Tests of Competing Theories.	2021	Hong Kong	380 organizations from construction industry (public contractors)	This research shed light on which theory better predicts how ability, motivation, and opportunity influence performance behaviours, because the differences between the four theories are not merely conceptual but have vastly different implications for practice	Composite reliability (CR) Average variance extracted (AVE)  Confirmatory factor analysis  Hierarchical linear modelling (HLM)  Necessary condition analysis (NCA)  Questionnaire	<ul style="list-style-type: none"> <li>The findings suggested that, empirically, performance behaviours are better predicted by the additive theory, which states that, on average, ability, motivation, and opportunity contribute additively to an individual's performance behaviours. Interestingly, this study also found support for the notion that ability, motivation, and opportunity are singly necessary for performance behaviours to occur. Taken together, the findings imply that the necessity of minimal levels of ability, motivation, and opportunity applies at high(er) levels of performance behaviours whereas the additive model explains the average effect of ability, motivation, and opportunity on performance behaviours</li> </ul>	<ul style="list-style-type: none"> <li>Field experiments</li> <li>Further conceptual and methodological refinements to determine conclusively which of the AMO theories is superior</li> <li>Another context</li> <li>Focus not only on intrinsic motivation</li> </ul>	Job performance behaviours: <b>Task performance</b> 6 items scale of employee in-role behaviours (IRB) <b>contextual performance</b> 15 items scale rating how likely they think it is they will be engaging in discretionary performance behaviours. (Using previous scales) See Appendix 1	<b>Ability to perform (self-perceptions)</b> 7 items scale Ability, experience, training, job knowledge <b>Motivation to perform</b> Intrinsic motivation <b>Opportunity to perform</b> Job-related information, availability of tools, equipment, budgetary support, help from other members, time, facilitative work environment (Using previous scales) See Appendix 1	<b>Control variables</b> Demographic characteristics: Age Gender Team type (type of organization they belong to) Social desirability

Vermeeren, B. (2017). Influencing public sector performance: studying the impact of ability-, motivation- and opportunity-enhancing human resources practices on various performance outcomes in the public sector.	2017	The Netherlands	882 employees of public sector <b>Dutch national survey on labour productivity</b>	To examine the effects of ability-, motivation-, and opportunity-enhancing HR practices on the effectiveness, efficiency, and fairness of public organizations, with job satisfaction considered as a mediating variable.	Hypotheses  Exploratory factor analysis Confirmatory factor analysis  Regression (bootstrapping method)  <b>Questionnaire</b>	<ul style="list-style-type: none"> <li>The analysis showed that the three HR components heterogeneously impact upon the three performance outcomes. Further, the results showed that ability-enhancing and opportunity-enhancing HR practices are more strongly related to performance outcomes than motivation-enhancing HR practices.</li> </ul>	Longitudinal studies the data we used may be subject to common method bias because all the measures were self-reported and collected among a single group of employees. Use objective performance indicators <ul style="list-style-type: none"> <li>to add other indicators of employee attitudes and behavior to the HRM-performance relationship and to focus on additional indicators that might influence the employment relationship such as leadership styles.</li> </ul>	<b>Organizational performance</b> Efficiency, effectiveness, fairness Set of 21 questions <b>5-point scale</b> <b>(Using previous scales)</b>	<b>AMO-enhancing HRM practices</b> <b>Ability-enhancing</b> Training and development, recruitment & selection <b>Motivation-enhancing</b> Rewards, performance appraisal <b>Opportunity-enhancing</b> Participation, Autonomy <b>5-point scale</b>	<b>Job satisfaction</b> Overall job satisfaction <b>5-point scale</b> <b>Control variables</b> Individual: gender, age, educational level Organizational: sector
Yasir, M., & Majid, A. (2020). High-involvement HRM practices and innovative work behavior among production-line workers: mediating role of employee's functional flexibility.	2020	Pakistan	831 production-line workers of manufacturing companies	To empirically examine the relationships between high-involvement human resource management (HI HRM) practices, employee functional flexibility (FF) and innovative work behavior (IWB). Furthermore, the mediating effect of FF has also been tested.	Hypotheses  Composite reliability (CR) Average variance extracted (AVE)  Confirmatory factor analysis  Hierarchical regression analysis  <b>Questionnaire</b>	<ul style="list-style-type: none"> <li>Findings revealed a direct effect of HI HRM practices on FF and IWB. In addition, the results confirm that FF positively mediates between HI HRM practices and IWB. Furthermore, three dimensions of HI HRM practices; ability-enhancing (AE), motivation-enhancing (ME) and opportunity-enhancing (OE) HRM practices also predicted FF and IWB</li> </ul>	<ul style="list-style-type: none"> <li>Longitudinal studies</li> <li>Some other mediators can also be included in this framework that makes this relationship more powerful and comprehensive</li> <li>Use multiple informant approach</li> <li>qualitative methods can also be adopted (systematic review, focused group discussions and interviews)</li> <li>Cover a broader set of variables, which will allow deeper understandings</li> </ul>	<b>Innovative work behaviour (IWB)</b> <b>5-point scale</b> <b>(Using previous scales)</b>	<b>HI HRM practices</b> <b>Ability-enhancing</b> Recruitment & selection, training <b>Motivation-enhancing</b> Performance-based pay, developmental feedback <b>Opportunity-enhancing</b> Employee participation, flexible job design <b>Also, and additive index was created to reflect a single overall measure of the HI HRM practices</b> <b>5-point scale</b> <b>(Using previous scales)</b>	<b>Functional flexibility</b> <b>5-point scale</b> <b>(Using previous scales)</b> <b>Control variables</b> Age, education, marital status, job experience, job status, working hours, business size and business age
Zhang et al., (2020). How do human resource management practices affect employee well-being? A mediated moderation model	2020	China	529 employees from various industries	To examine how HRM practices—including ability, motivation, and opportunity practices – affect employee well-being (EWB) – including life well-being, job well-being and psychological well-being – in the Chinese cultural context.	Hypotheses  Confirmatory factor analysis  Harman single-factor test  Structural equation modelling (SEM)  <b>Survey</b>	<ul style="list-style-type: none"> <li>The findings indicate that HRMPs have a significant positive effect on EWB. Specifically, practices based on ability, motivation and opportunity have a significant positive effect on job well-being, life well-being and psychological well-being, respectively. Integrity leadership moderates the impact of HRMPs on EWB. Organizational justice has a partial mediating effect on the relationship between HRMPs and EWB. Integrity leadership moderates the mediation effect of organizational justice in the relationship between HRMPs and EWB</li> </ul>	<ul style="list-style-type: none"> <li>Add organizational climate and organizational culture as potential mediators</li> <li>Evaluate other positive leadership styles as potential moderators, such as servant leadership, tolerant leadership, and ethical leadership</li> <li>Consider the leader-member exchange that reflects the quality of leader-follower interaction as another moderator in their theoretical models</li> <li>Adopt a more objective method of data collection, for example, longitudinal tracking data would help uncover the causal effect between variables</li> <li>The research model should be tested using data collected from samples in other cultural contexts</li> </ul>	<b>Employee well-being</b> 18 items including 3 dimensions: life well-being, job well-being, psychological well-being <b>5-point scale</b> <b>(Using previous scales)</b>	<b>HI HRM practices</b> (additive index) <b>Ability-enhancing</b> 3 items <b>Motivation-enhancing</b> 6 items <b>Opportunity-enhancing</b> 9 items <b>5-point scale</b> <b>(Using previous scales)</b>	<b>Integrity leadership</b> <b>Organizational justice</b> 4 dimensions: procedural, distribution, interpersonal and information justice <b>5-point scale</b> <b>(Using previous scales)</b> <b>Control variables</b> Employees' gender, age, education, length of employment, employment type, nature of the business

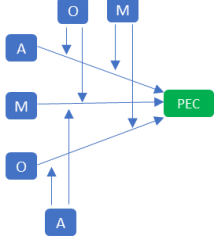
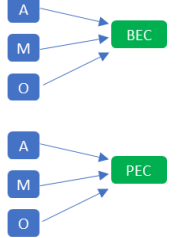
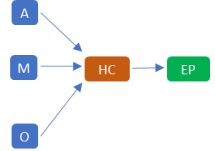
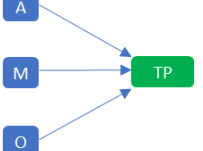
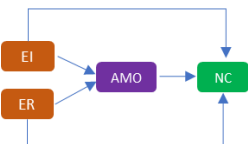

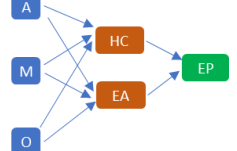
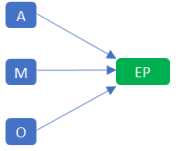


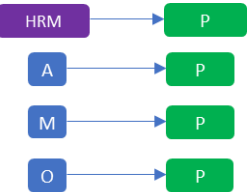
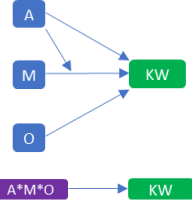
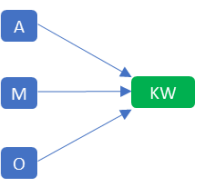
Anexo C: modelos de interacción (Modelo AMO)



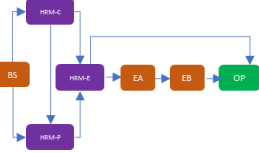

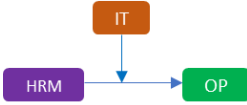

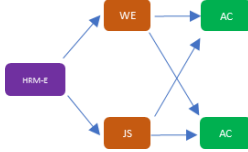
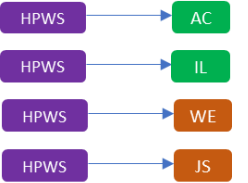
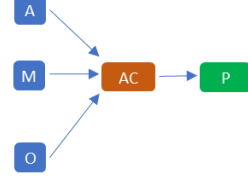
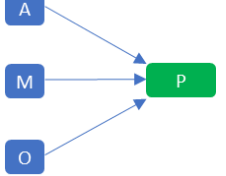
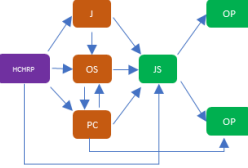

Article	Items	Multiplicative	Summative	Combinative	Constraining factor	Single-necessary & jointly sufficient	Moderator	Mediator	Direct
Alba et al., (2021). Identifying the determinants of individual scientific performance: A perspective focused on AMO theory.	ISP - Individual scientific performance			2-way interaction ✓					
Al-Shahwani, T. M. (2020). Impact of AMO enhancing human resource management practices on sustainable competitive advantage in insurance companies in Qatar.	SCA – Sustainable competitive advantage		✓						
Andreeva, T., & Sergeeva, A. (2016). The more the better ... or is it? The contradictory effects of HR practices on knowledge-sharing motivation and behaviour. As → ability to share knowledge Ims → Intrinsic motivation to share knowledge Ems → Extrinsic motivation to share knowledge	KSB – Knowledge sharing behaviour		✓	2-way interaction ✓					
Bayo-Moriones, A., & Bello-Pindado, A. (2021). Differences in the impact of AMO bundles of line managers and frontline workers on the performance of manufacturing firms.	MP – Manufacturing performance		✓						
Bello-Pintado, A., & Garcés-Galdeano, L. (2019). Bundles of HRM practices in family and non-family firms: the impact on enhancing performance.	MP – Manufacturing performance		✓	2-way interaction ✓					
Beltrán-Martin, I., & Bou-Lusar, J. C. (2018). Examining the intermediate role of employee abilities, motivation, and opportunities to participate in the relationship between HR bundles and employee performance. EA – Employee abilities EM – Employee motivation EO – Employee opportunities to participate	EP – Employee performance	✓	✓	2-way interaction ✓					


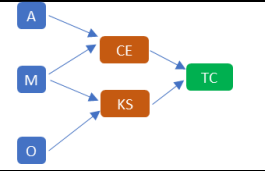

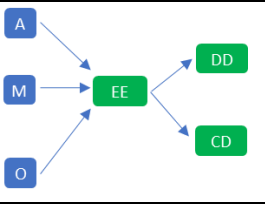
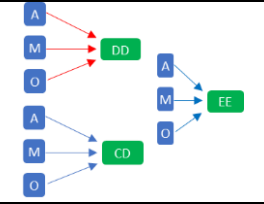

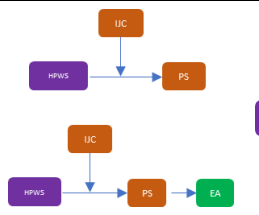
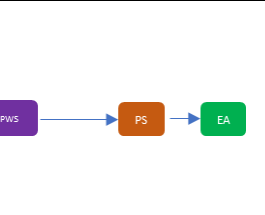
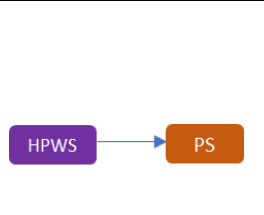

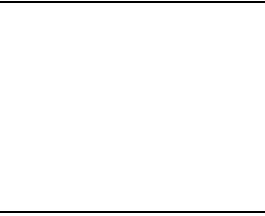
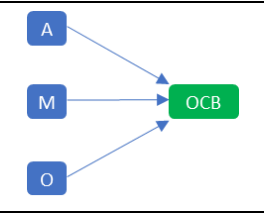

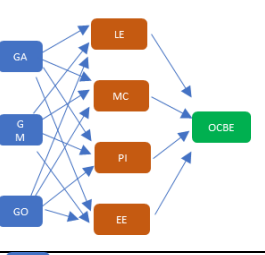

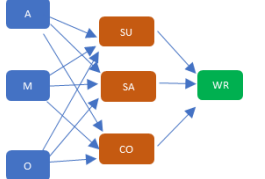
<p>Bhatti et al., (2021). High-performance work systems, innovation, and knowledge sharing: An empirical analysis in the context of project-based organizations.</p>	<p><b>IP – Innovation Performance</b></p> <p>KS – Knowledge sharing</p>	<p>✓</p>	<p>✓</p>					
<p>Bos-Nehles et al., (2013). Employee perceptions of line management performance: Applying the AMO theory to explain the effectiveness of line managers' HRM implementation.</p>	<p><b>HRM I – Human Resource management implementation</b></p>		<p>2-way interaction</p> <p>✓</p>					
<p>Bouwman et al., (2019). Stimulating teachers' team performance through team-oriented HR practices: the roles of affective team commitment and information processing.</p>	<p><b>TI – Team innovation</b></p> <p><b>TE – Team efficacy</b></p> <p>HRP – Team oriented HR practices</p> <p>ATC – Affective team commitment</p> <p>IP – Information processing</p>	<p>✓</p>	<p>✓</p>					
<p>Cai et al., (2020). Optimizing Employee Creativity in the Digital Era: Uncovering the Interactional Effects of Abilities, Motivations, and Opportunities.</p>	<p><b>EC – Employee creativity</b></p>	<p>✓</p>	<p>2-way interaction</p> <p>✓</p>					
<p>Chung, G. H., &amp; Pak, J. (2021). Is there internal fit among ability-, motivation-, and opportunity-enhancing HR practices? Evidence from South Korea.</p>	<p><b>IP – Individual Performance</b></p>	<p>✓</p>	<p>2-way interaction</p> <p>✓</p>					
<p>Collins, C., &amp; Kehoe, R. (2017). Examining strategic fit and misfit in the management of knowledge workers.</p>	<p><b>FP – Firm performance</b></p> <p>E-HRS – Engineering HR system</p> <p>B-HRS – Bureaucratic HR system</p> <p>C-HRS – Commitment HR system</p>							<p>Firms pursuing <b>exploration strategy</b></p>  <p>Firms pursuing <b>exploitation strategy</b></p> 

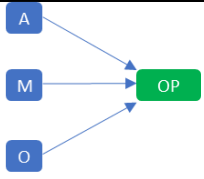
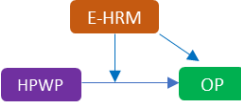

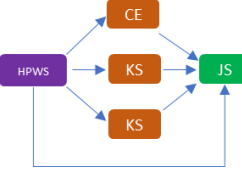

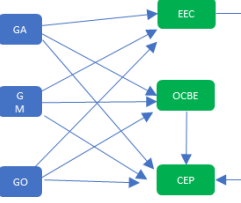
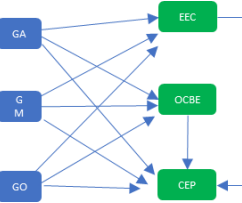
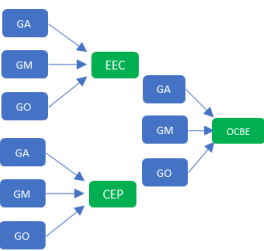
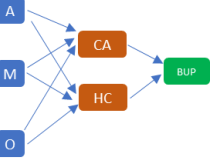
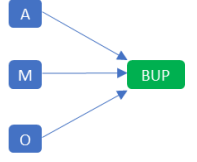
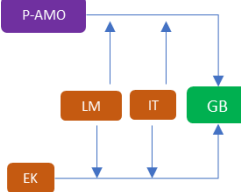

<p>Dasi et al., (2021). Teams and Project Performance: An Ability, Motivation, and Opportunity Approach.</p>	<p><b>PP – Project performance</b></p>	<p>✓</p>	<p>✓</p>	<p>✓</p>		
<p>Dastmalchian, A. et al. (2020). High-performance work systems and organizational performance across societal cultures.</p> <p>HPWS – High performance work systems</p> <p>PD – Power distance</p> <p>GC – In-group collectivism</p> <p>IC – Institutional collectivism</p>	<p><b>OP – Organizational Performance</b></p>	<p>✓</p>				
<p>Edgar et al., (2020). The HPWS and AMO: a dynamic study of system- and individual-level effects.</p> <p>CP – Contextual performance</p> <p>EA – Employee abilities</p> <p>EM – Employee motivation</p> <p>EO – Employee opportunities to participate</p>	<p><b>TP – Task performance</b></p>	<p>✓</p>				
<p>Eib et al., (2020). What helps managers being fair? Predicting managers' self-reported justice enactment during pay setting using the ability-motivation-opportunity framework.</p>	<p><b>JE – Justice Enactment</b></p>	<p>✓</p>				
<p>Garmendia et al., (2021). High-involvement HRM, job satisfaction and productivity: A two wave longitudinal study of a Spanish retail company.</p> <p>P-HIWS – Perceived High involvement work system (additive index)</p>	<p><b>P – Productivity</b></p> <p><b>JS – Job satisfaction</b></p>	<p>✓</p>				

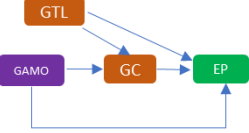

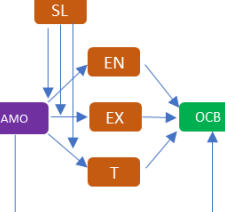
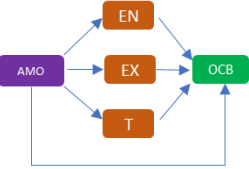
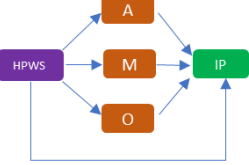
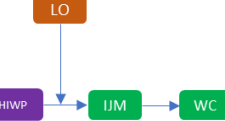



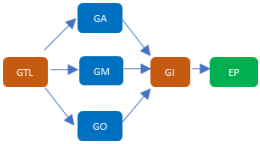
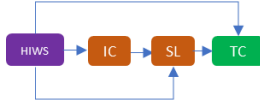

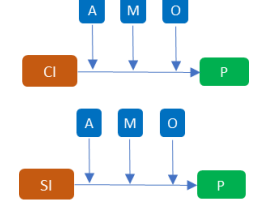
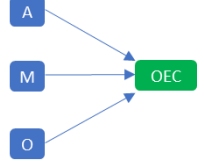

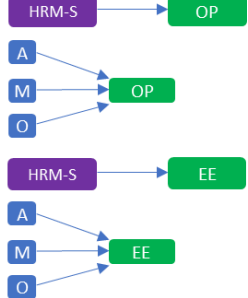
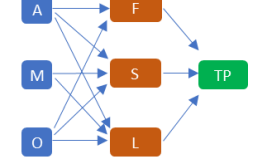
<p>Guerci et al., (2017). Empirical insights on the nature of synergies among HRM policies - An analysis of an ethics-oriented HRM system.</p>	<p>BEC – Benevolent ethical climate PEC – Principled ethical climate</p>		<p>✓</p>	<p>2-way interaction</p> <p>✓</p>					
<p>Hafeez et al., (2020). Examining the effect of high-performance human resource practices on team performance in development sector projects: Mediating role of trust.</p>	<p>TP – Team performance TR - Trust</p>		<p>✓</p>						
<p>Hassan et al., (2020). Managing the Obligation to Stay through Employee Involvement, Recognition and AMO Model: A Study Among Millennial Employees.</p>	<p>NC – Normative commitment EI – Employee involvement ER – Employee Recognition AMO – Additive index</p>		<p>✓</p>						
<p>Hauff et al., (2021). Exploring necessary conditions in HRM research: Fundamental issues and methodological implications.</p>	<p>EP – Employee performance HC – Human capital EA – Employee attitudes</p>		<p>✓</p>						
<p>Ho, H., &amp; Kuvaas, B. (2020). Human resource management systems, employee well-being, and firm performance from the mutual gains and critical perspectives: The well-being paradox.</p>	<p>P – Firm performance EW – Employee wellbeing HRM – HRM systems (aggregated index)</p>	<p>✓</p>	<p>✓</p>				<p>Interactions between AMO bundles will be associated with higher firm performance/employee wellbeing than each bundle taken in isolation, reflecting the notion of positive synergy.</p>  <p>Interactions among AMO bundles will be associated with lower firm performance/employee wellbeing than each bundle taken in isolation, reflecting the notions of substitutes and negative synergy</p> 		
<p>Hosseingholizadeh et al., (2016). The role of motivation, ability, and opportunity in achieving effective knowledge-work: Knowledge work and MAO.</p>	<p>KW – Knowledge work (knowledge creation, knowledge sharing and knowledge application)</p>	<p>✓</p>		<p>2-way interaction</p> <p>✓</p>					

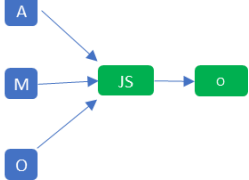
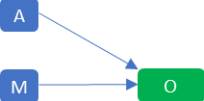
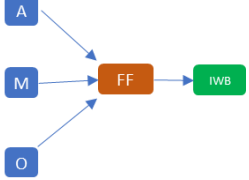
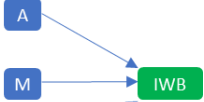
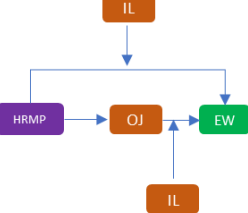

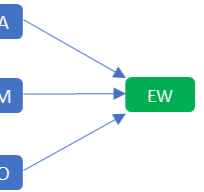
<p>Jyoti, J., &amp; Rani, A. (2017). High performance work system and organisational performance: role of knowledge management. <i>Personnel Review</i>, 46(8), 1770–1795. <a href="https://doi.org/10.1108/PR-10-2015-0262">https://doi.org/10.1108/PR-10-2015-0262</a></p>	<p><b>OP – Organizational Performance</b></p> <p>KM – Knowledge management</p> <p>HPWS – High performance work system (Additive index)</p>		✓					
<p>Katou, A. A. (2017). How does human resource management influence organisational performance? An integrative approach-based analysis.</p>	<p><b>OP – Operational Performance</b></p> <p>BS – Business strategies (cost; innovation, quality)</p> <p>HRM-C – HRM content (additive index) HRM-P – HRM process HRM-E – HRM as experienced</p> <p>EA – Employee attitudes EB – Employee behaviour</p>		✓					
<p>Kengatharan, N. (2020). Firm performance: HR practices and IT.</p>	<p><b>P – Firm performance</b></p> <p>HRM – HRM practices (Additive index)</p> <p>IT – Use of Information technology</p>		✓					
<p>Kloutsiniotis, P. V., &amp; Mihail, D. M. (2017). Linking innovative human resource practices, employee attitudes and intention to leave in healthcare services.</p>	<p><b>AC – Affective commitment</b></p> <p><b>IL – Intention to leave</b></p> <p>WE – Work engagement JS – Job satisfaction</p> <p>HPWS – High performance work system (additive index)</p>		✓					
<p>Kundu et al., (2018). Ability-motivation-opportunity enhancing human resource practices and firm performance: Evidence from India.</p>	<p><b>P – Firm performance</b></p> <p>AC – Affective commitment</p>		✓					
<p>Latorre et al., (2016). High commitment HR practices, the employment relationship and job performance: A test of a mediation model.</p>	<p><b>SA – Sickness absence</b></p> <p><b>EP – Employee performance</b></p> <p><b>JS – Job satisfaction</b></p> <p>HCHRP – High commitment HR practices (Additive index)</p> <p>J – Job security OS – Organizational support PC – Psychological contract</p>		✓					

<p>Ma et al., (2017). Why do high-performance human resource practices matter for team creativity? The mediating role of collective efficacy and knowledge sharing.</p>	<p><b>TC – Team creativity</b></p> <p>CE – Collective efficacy</p> <p>KS – Knowledge sharing</p>							
<p>Malik, P., &amp; Lenka, U. (2019). Exploring the impact of perceived AMO framework on constructive and destructive deviance: Mediating role of employee engagement.</p>	<p><b>DD- Destructive deviance</b></p> <p><b>CD – Constructive deviance</b></p> <p><b>EE – Employee engagement</b></p>							
<p>Miao et al., (2021). High-performance work systems and key employee attitudes: the roles of psychological capital and an interactional justice climate.</p>	<p><b>EA – Employee attitudes</b> (job satisfaction, affective commitment)</p> <p>IJC – Interactional justice climate</p> <p>HPWS – High performance work system</p> <p>PC – Psychological capital</p>							
<p>Morales-Sanchez, R., &amp; Pasamar, S. (2019). How to improve organisational citizenship behaviour by combining ability, motivation, and opportunity The moderator role of perceived organisational support.</p>	<p><b>OCB – organizational citizenship behavior</b></p> <p>POS - perceived organizational support</p>							
<p>Muisyo et al., (n.d.). Implications of GHRM on organisational citizenship behaviour: the mediating role of enablers of green culture.</p>	<p><b>OCBE – organizational citizenship behaviour towards environment</b></p> <p>LE – Leadership emphasis</p> <p>MC – Message credibility</p> <p>PI – Peer involvement</p> <p>EE – Employee empowerment</p> <p>GA – Green abilities</p> <p>GM – Green motivation</p> <p>GO – Green opportunities</p>							
<p>Nguyen et al., (2020). The impact of human resource management activities on the compatibility and work results.</p>	<p><b>WR - Work results</b></p> <p>SU - Job Suitability</p> <p>SA - Job Sacrifice</p> <p>CO - Job Connection</p>							

<p>Obeidat et al., (2016). The link between high performance work practices and organizational performance: Empirically validating the conceptualization of HPWP according to the AMO model.</p>	<p><b>OP – Organizational Performance</b></p>		<p>✓</p>						
<p>Obeidat, S. M. (2017). An examination of the moderating effect of electronic-HRM on high performance work practices and organisational performance link.</p>	<p><b>OP – Organizational Performance</b></p> <p>HPWS – High performance work practices (additive index)</p> <p>E-HRM – electronic HRM implementation</p>		<p>✓</p>	<p>✓</p>					
<p>Ollo-López et al., (2016). Disentangling the relationship between high-involvement-work-systems and job satisfaction.</p>	<p><b>JS – Job satisfaction</b></p> <p>HPWS – High performance work systems (additive index)</p> <p>IJ – Interesting job E – Effort W – Wages</p>			<p>✓</p>					
<p>Pham et al., (2020). The role of green human resource management in driving hotel's environmental performance: Interaction and mediation analysis.</p>	<p><b>OCBE – organizational citizenship behaviour towards environment</b></p> <p><b>EEC – Employee environmental commitment</b></p> <p><b>CEP – Corporate environmental performance</b></p> <p>GA – Green training GM – Green performance management GO – Green employee involvement</p>	<p>3 way- interaction</p>	<p>✓</p>	<p>2 way- interaction</p>					
<p>Raineri, A. (2017). Linking human resources practices with performance: the simultaneous mediation of collective affective commitment and human capital.</p>	<p><b>BUP – Business unit performance</b></p> <p>CA – Collective affective HC – Human capital</p>		<p>✓</p>						
<p>Rayner, J., &amp; Morgan, D. (2018). An empirical study of 'green' workplace behaviours: ability, motivation, and opportunity.</p>	<p><b>GB – Green behaviours</b></p> <p><b>P-AMO – Pro environmental AMO (additive index)</b></p> <p><b>EK – Environmental knowledge</b></p> <p><b>LM – Line manager</b></p> <p><b>IT – Industry type</b></p>		<p>✓</p>						

<p>Rincon-Roldan, F., &amp; Lopez-Cabrales, A. (2021). Linking organisational values and sustainability: the role of AMO practices.</p>	<p><b>S – Business sustainability</b></p> <p>PS – Perceived support</p> <p>R – Respect</p> <p>RP – Responsibility</p> <p>AMO – HRM management practices (additive index)</p>								
<p>Rizvi, Y. S., &amp; Garg, R. (2021). The simultaneous effect of green ability-motivation-opportunity and transformational leadership in environment management: the mediating role of green culture.</p>	<p><b>EP – Environmental performance</b></p> <p>GAMO – Green ability, motivation &amp; opportunity (additive index)</p> <p>GTL – Green transformational leadership</p> <p>GC – Green culture</p>								
<p>Salas-Vallina et al., (2021). Well-being in times of ill-being: how AMO HRM practices improve organizational citizenship behaviour through work-related well-being and service leadership.</p>	<p><b>OCB – organizational citizenship behaviour</b></p> <p>AMO – AMO HRM practices</p> <p>SL – Service leadership</p> <p>EN – Engagement</p> <p>EX – Exhaustion</p> <p>T – Trust</p>								
<p>Shahzad et al., (2019). Unpacking the relationship between high-performance work systems and innovation performance in SMEs.</p>	<p><b>IP – Innovation Performance</b></p> <p>HPWS – High performance work systems (Additive index)</p> <p>A – Human capital (KSA) of employees</p> <p>M – Motivation of employees</p> <p>O – Voice opportunity</p>								
<p>Shin et al., (2018). Do high-involvement HRM practices matter for worker creativity? a cross-level approach.</p>	<p><b>WC – Worker creativity</b></p> <p>IJM – intrinsic job motivation</p> <p>HIWP – High involvement HRM practices (additive index)</p> <p>LO - Learning orientation</p>								
<p>Siddique et al., (2019). The role of relational coordination in the relationship between high-performance work systems (HPWS) and organizational performance.</p>	<p><b>P – Performance outcomes</b></p> <p>HPWS – High performance work systems (Additive index)</p> <p>RC – Relational coordination</p>								

<p>Singh et al., (2020). Green innovation and environmental performance: The role of green transformational leadership and green human resource management.</p>	<p><b>EP – Environmental performance</b></p> <p>GTL – Green transformational leadership</p> <p>GA – Green ability GM – Green motivation GO – Green opportunity</p> <p>GI – Green innovation</p>		<p>✓</p>						
<p>Song et al., (2020). The effects of high-involvement work systems and shared leadership on team creativity: A multilevel investigation.</p>	<p><b>TC – Team creativity</b></p> <p>SL – Shared leadership</p> <p>IC – Involvement climate</p> <p>HIWS – High involvement work system (additive index)</p>		<p>✓</p>						
<p>Tarifa Fernández et al., (2021). Examining the moderating role of HIHRP in the relationship between external integration and productivity.</p>	<p><b>P – Productivity</b></p> <p>CI - Customer integration</p> <p>SI – Supplier integration</p>								
<p>Tay et al., (2017). The power of ability-motivation-opportunity enhancing human resource management practices on organizational ethical climate. International</p>	<p><b>OEC – Organizational ethical climate</b></p>		<p>✓</p>						
<p>Tensay, A. T., &amp; Singh, M. (2020). The nexus between HRM, employee engagement and organizational performance of federal public service organizations in Ethiopia.</p>	<p><b>OP – Organizational Performance</b></p> <p><b>EE – Employee engagement</b></p> <p>HRM-S – Human resource management system (additive index). Also, AMO dimensions</p>		<p>✓</p>						
<p>Tian et al., (2016). Staying and performing: How human resource management practices increase job embeddedness and performance.</p>	<p><b>TP – Supervisor rated task performance</b></p> <p>F - Organisational fit</p> <p>S - Organizational sacrifice</p> <p>L - Organizational links</p>		<p>✓</p>						

<p>Tuuli, M. M., &amp; van Rhee, H. (2021). How Ability, Motivation, and Opportunity Drive Individual Performance Behaviors in Projects: Tests of Competing Theories.</p>	<p><b>Task performance</b> <b>Contextual performance</b></p>	<p>✓</p>	<p>✓</p>		<p>✓</p>	<p>✓</p>			
<p>Vermeeren, B. (2017). Influencing public sector performance: studying the impact of ability-, motivation- and opportunity-enhancing human resources practices on various performance outcomes in the public sector.</p>	<p><b>O - Organizational outcomes</b> (Effectiveness, efficiency, fairness) <b>Job satisfaction</b></p>		<p>✓</p>						
<p>Yasir, M., &amp; Majid, A. (2020). High-involvement HRM practices and innovative work behavior among production-line workers: mediating role of employee's functional flexibility.</p>	<p><b>IWB – Innovative work behaviour</b> FF – Functional flexibility</p>		<p>✓</p>						
<p>Zhang et al., (2020). How do human resource management practices affect employee well-being? A mediated moderation model</p>	<p><b>EW – Employee well-being</b> HRMPs – Human resource management practices (aggregated index), Also, AMO dimensions OJ – Organizational justices IL – Integrity leadership</p>		<p>✓</p>						

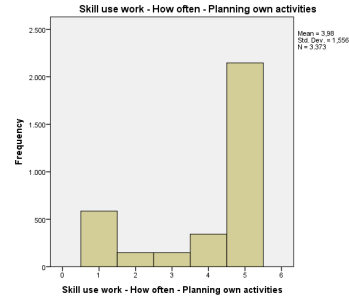
Anexo D: tablas de frecuencia e histogramas. Prácticas de alta implicación (PIAAC database)

**Job autonomy**

*F\_Q03a: How often does/did your job/last job usually involve planning your activities?*

Skill use work - How often - Planning own activities

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Never	586	17,3	17,4	17,4
	Less than once a month	148	4,4	4,4	21,8
	Less than once a week but at least once a month	148	4,4	4,4	26,1
	At least once a week but not every day	344	10,2	10,2	36,3
	Every day	2147	63,4	63,7	100,0
	Total	3373	99,6	100,0	
Missing	Don't know	1	,0		
	Refused	12	,4		
	Total	13	,4		
Total	3386	100,0			



*F\_Q03c: How often does/did your job/last job usually involve organizing your own time?*

Skill use work - How often - Organising own time

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Never	456	13,5	13,5	13,5
	Less than once a month	97	2,9	2,9	16,4
	Less than once a week but at least once a month	129	3,8	3,8	20,2
	At least once a week but not every day	246	7,3	7,3	27,5
	Every day	2444	72,2	72,5	100,0
	Total	3372	99,6	100,0	
Missing	Don't know	3	,1		
	Refused	11	,3		
	Total	14	,4		
Total	3386	100,0			

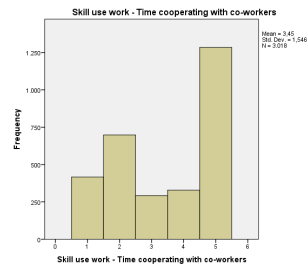


**Teamwork**

*F\_Q01b: in your job/last job, what proportion of your time do/did you usually spend cooperating or collaborating with co-workers?*

Skill use work - Time cooperating with co-workers

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	None of the time	416	12,3	13,8	13,8
	Up to a quarter of the time	698	20,6	23,1	36,9
	Up to half of the time	292	8,6	9,7	46,6
	More than half of the time	328	9,7	10,9	57,5
	All of the time	1284	37,9	42,5	100,0
	Total	3018	89,1	100,0	
Missing	Valid skip	353	10,4		
	Don't know	4	,1		
	Refused	11	,3		
Total	368	10,9			
Total	3386	100,0			



**Staff training**

*D\_Q13a: In your job, how often do you learn new work-related things from co-workers or supervisors? (If the respondent has no co-workers or supervisors, the answer should be "never").*

Current work - Learning - Learning from co-workers/supervisors

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Never	521	15,4	17,2	17,2
	Less than once a month	521	15,4	17,2	34,5
	Less than once a week but at least once a month	426	12,6	14,1	48,6
	At least once a week but not every day	465	13,7	15,4	63,9
	Every day	1090	32,2	36,1	100,0
	Total	3023	89,3	100,0	
Missing	Valid skip	353	10,4		
	Don't know	2	,1		
	Refused	8	,2		
Total	363	10,7			
Total	3386	100,0			





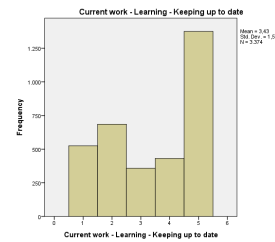
*D\_Q13b: How often does your job involve learning-by-doing from the tasks you perform?*

Current work - Learning - Learning-by-doing					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Never	334	9,9	9,9	9,9
	Less than once a month	433	12,8	12,8	22,7
	Less than once a week but at least once a month	340	10,0	10,1	32,8
	At least once a week but not every day	484	14,3	14,4	47,2
	Every day	1781	52,6	52,8	100,0
	Total	3372	99,6	100,0	
Missing	Don't know	5	,1		
	Refused	9	,3		
	Total	14	,4		
Total		3386	100,0		



*D\_Q13c: How often does your job involve keeping up to date with new products or services?*

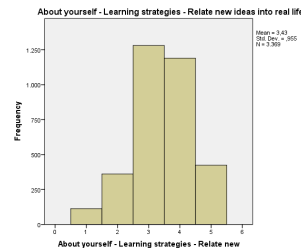
Current work - Learning - Keeping up to date					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Never	525	15,5	15,6	15,6
	Less than once a month	685	20,2	20,3	35,9
	Less than once a week but at least once a month	358	10,6	10,6	46,5
	At least once a week but not every day	431	12,7	12,8	59,2
	Every day	1375	40,6	40,8	100,0
	Total	3374	99,6	100,0	
Missing	Don't know	5	,1		
	Refused	7	,2		
	Total	12	,4		
Total		3386	100,0		



**Self-determination learning style**

*I\_Q04b: When I hear or read about new ideas, I try to relate them to real life situations to which they might apply*

About yourself - Learning strategies - Relate new ideas into real life					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not at all	113	3,3	3,4	3,4
	Very little	361	10,7	10,7	14,1
	To some extent	1281	37,8	38,0	52,1
	To a high extent	1190	35,1	35,3	87,4
	To a very high extent	424	12,5	12,6	100,0
	Total	3369	99,5	100,0	
Missing	Don't know	15	,4		
	Refused	2	,1		
	Total	17	,5		
Total		3386	100,0		



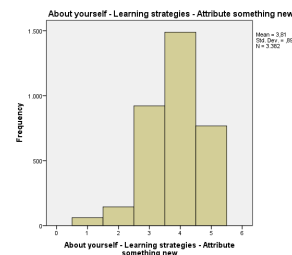
*I\_Q04d: I like learning new things*

About yourself - Learning strategies - Like learning new things					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not at all	27	,8	,8	,8
	Very little	50	1,5	1,5	2,3
	To some extent	417	12,3	12,3	14,6
	To a high extent	1534	45,3	45,3	59,9
	To a very high extent	1357	40,1	40,1	100,0
	Total	3385	100,0	100,0	
Missing	Don't know	1	,0		
	Total	3386	100,0		



*I\_Q04h: When I come across something new, I try to relate it to what I already know*

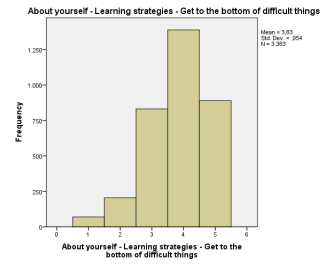
About yourself - Learning strategies - Attribute something new					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not at all	61	1,8	1,8	1,8
	Very little	144	4,3	4,3	6,1
	To some extent	922	27,2	27,3	33,3
	To a high extent	1488	43,9	44,0	77,3
	To a very high extent	767	22,7	22,7	100,0
	Total	3382	99,9	100,0	
Missing	Don't know	4	,1		
	Total	3386	100,0		



*I\_Q04j: I like to get to the bottom of difficult things*

**About yourself - Learning strategies - Get to the bottom of difficult things**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not at all	70	2,1	2,1	2,1
	Very little	205	6,1	6,1	8,1
	To some extent	831	24,5	24,6	32,7
	To a high extent	1388	41,0	41,0	73,7
	To a very high extent	889	26,3	26,3	100,0
	Total	3383	99,9	100,0	
Missing	Don't know	2	,1		
	Refused	1	,0		
	Total	3	,1		
<b>Total</b>		<b>3386</b>	<b>100,0</b>		



*I\_Q04l: I like to figure out how different ideas fit together*

**About yourself - Learning strategies - Figure out how different ideas fit together**

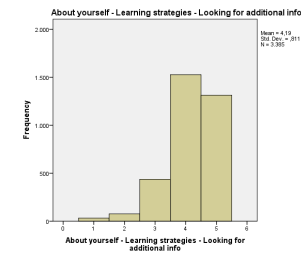
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not at all	146	4,3	4,4	4,4
	Very little	400	11,8	11,9	16,3
	To some extent	1105	32,6	33,0	49,3
	To a high extent	1179	34,8	35,2	84,4
	To a very high extent	522	15,4	15,6	100,0
	Total	3352	99,0	100,0	
Missing	Don't know	34	1,0		
	Total	3386	100,0		



*I\_Q04m: If I don't understand something, I look for additional information to make it clearer*

**About yourself - Learning strategies - Looking for additional info**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not at all	32	,9	,9	,9
	Very little	76	2,2	2,2	3,2
	To some extent	437	12,9	12,9	16,1
	To a high extent	1527	45,1	45,1	61,2
	To a very high extent	1313	38,8	38,8	100,0
	Total	3385	100,0	100,0	
Missing	Don't know	1	,0		
	Total	3386	100,0		

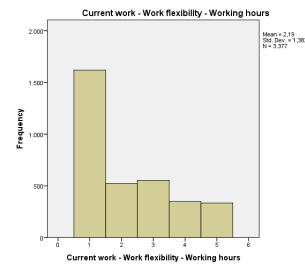


**Flexible work**

*D\_Q11d: To what extent can you choose or change your working hours?*

**Current work - Work flexibility - Working hours**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not at all	1619	47,8	47,9	47,9
	Very little	523	15,4	15,5	63,4
	To some extent	553	16,3	16,4	79,8
	To a high extent	348	10,3	10,3	90,1
	To a very high extent	334	9,9	9,9	100,0
	Total	3377	99,7	100,0	
Missing	Don't know	1	,0		
	Refused	8	,2		
	Total	9	,3		
<b>Total</b>		<b>3386</b>	<b>100,0</b>		

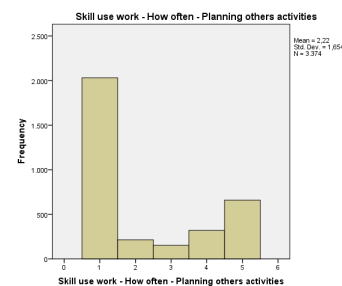


**Supportive management**

*F\_Q03b How often Does/Did your Job/Last job usually involve planning the activity of others?*

**Skill use work - How often - Planning others activities**

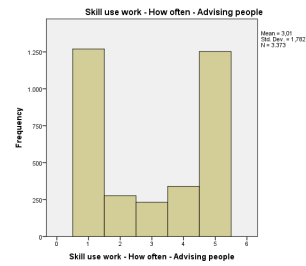
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Never	2030	60,0	60,2	60,2
	Less than once a month	214	6,3	6,3	66,5
	Less than once a week but at least once a month	152	4,5	4,5	71,0
	At least once a week but not every day	319	9,4	9,5	80,5
	Every day	659	19,5	19,5	100,0
	Total	3374	99,6	100,0	
Missing	Refused	12	,4		
	Total	3386	100,0		



*F\_Q02e How often Does/Did your Job/Last job usually involve advising people?*

**Skill use work - How often - Advising people**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Never	1270	37,5	37,7	37,7
	Less than once a month	277	8,2	8,2	45,9
	Less than once a week but at least once a month	233	6,9	6,9	52,8
	At least once a week but not every day	340	10,0	10,1	62,9
	Every day	1253	37,0	37,1	100,0
	Total	3373	99,6	100,0	
Missing	Refused	13	,4		
Total		3386	100,0		

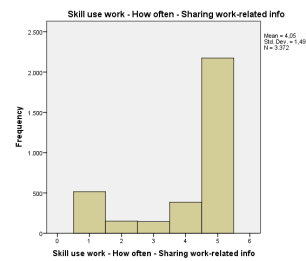


**Information sharing**

*F\_Q02a How often Does/Did your Job/Last job usually involve sharing work-related information with co-workers?*

**Skill use work - How often - Advising people**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Never	1270	37,5	37,7	37,7
	Less than once a month	277	8,2	8,2	45,9
	Less than once a week but at least once a month	233	6,9	6,9	52,8
	At least once a week but not every day	340	10,0	10,1	62,9
	Every day	1253	37,0	37,1	100,0
	Total	3373	99,6	100,0	
Missing	Refused	13	,4		
Total		3386	100,0		



*F\_Q02b How often Does/Did your Job/Last job usually involve instructing, training, or teaching people, individually or in groups?*

**Skill use work - How often - Teaching people**

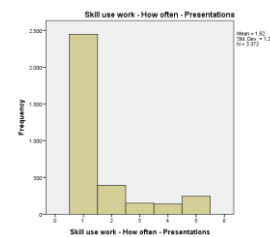
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Never	1338	39,5	39,7	39,7
	Less than once a month	608	18,0	18,0	57,7
	Less than once a week but at least once a month	268	7,9	7,9	65,6
	At least once a week but not every day	386	11,4	11,4	77,1
	Every day	773	22,8	22,9	100,0
	Total	3373	99,6	100,0	
Missing	Refused	13	,4		
Total		3386	100,0		



*F\_Q02c How often Does/Did your Job/Last job usually involve making speeches or giving presentations in front of five or more people?*

**Skill use work - How often - Presentations**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Never	2448	72,3	72,6	72,6
	Less than once a month	392	11,6	11,6	84,2
	Less than once a week but at least once a month	149	4,4	4,4	88,6
	At least once a week but not every day	139	4,1	4,1	92,8
	Every day	244	7,2	7,2	100,0
	Total	3372	99,6	100,0	
Missing	Refused	14	,4		
Total		3386	100,0		

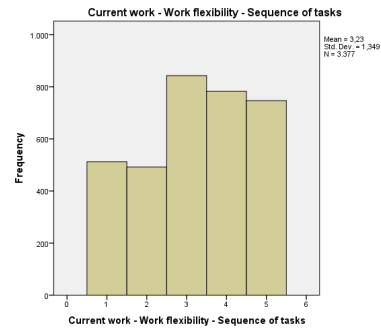


## Participatory decision-making

*D\_Q11a: To what extent can you choose or change the sequence of your tasks?*

1. *Not at all*
2. *Very little*
3. *To some extent*
4. *To a high extent*
5. *To a very high extent*

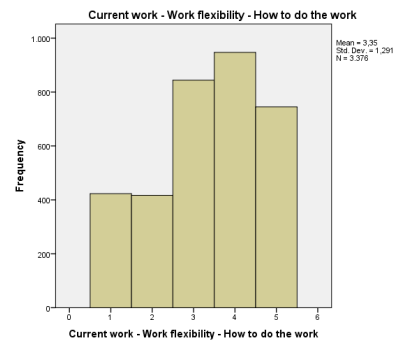
Current work - Work flexibility - Sequence of tasks					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not at all	512	15,1	15,2	15,2
	Very little	492	14,5	14,6	29,7
	To some extent	843	24,9	25,0	54,7
	To a high extent	783	23,1	23,2	77,9
	To a very high extent	747	22,1	22,1	100,0
Total		3377	99,7	100,0	
Missing	Don't know	1	,0		
	Refused	8	,2		
	Total	9	,3		
Total		3386	100,0		



*D\_Q11b: To what extent can you choose or change how you do your work?*

1. *Not at all*
2. *Very little*
3. *To some extent*
4. *To a high extent*
5. *To a very high extent*

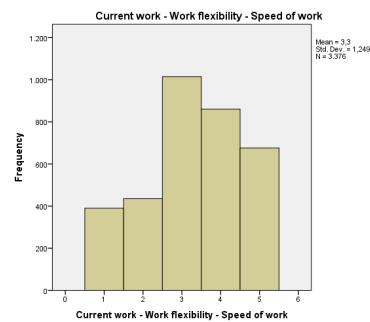
Current work - Work flexibility - How to do the work					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not at all	423	12,5	12,5	12,5
	Very little	417	12,3	12,4	24,9
	To some extent	844	24,9	25,0	49,9
	To a high extent	947	28,0	28,1	77,9
	To a very high extent	745	22,0	22,1	100,0
Total		3376	99,7	100,0	
Missing	Don't know	1	,0		
	Refused	9	,3		
	Total	10	,3		
Total		3386	100,0		



*D\_Q11c: To what extent can you choose or change the speed or rate at which you work?*

1. *Not at all*
2. *Very little*
3. *To some extent*
4. *To a high extent*
5. *To a very high extent*

Current work - Work flexibility - Speed of work					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not at all	390	11,5	11,6	11,6
	Very little	435	12,8	12,9	24,4
	To some extent	1015	30,0	30,1	54,5
	To a high extent	860	25,4	25,5	80,0
	To a very high extent	676	20,0	20,0	100,0
Total		3376	99,7	100,0	
Missing	Don't know	2	,1		
	Refused	8	,2		
	Total	10	,3		
Total		3386	100,0		



Anexo E: Hipótesis por artículo. 2ª revisión (2016-2022)

Article	Hypotheses (green-accepted, red-rejected/not accepted, Orange-partially supported, blue-not tested)
Alba et al., (2021). Identifying the determinants of individual scientific performance: A perspective focused on AMO theory.	<p>Hypothesis 1: There is a direct and positive relationship between a researcher's abilities (academic human capital) and individual scientific performance (ISP).</p> <p>H1a: <i>theoretical knowledge</i> → ISP  H1b: <i>explicit knowledge</i> → ISP  H1c: <i>scientific skills</i> → ISP  H1d: <i>scientific abilities</i> → ISP</p> <p>Hypothesis 2: The positive effect of a researcher's abilities (academic human capital) on individual scientific performance increases as the researcher's motivation increases.</p> <p>H2a: ... as the researcher's intrinsic motivation increases.  H2n: ... as the researcher's extrinsic motivation increases.</p> <p>Hypothesis 3: The positive effect of a researchers' abilities (academic human capital) on individual scientific performance is higher as the researcher's opportunities increase.</p> <p>H3a: ...as the availability of financial resources increases.  H3b: ...as the availability of qualified human resources increases.  H3c: ...as the availability of physical resources increases.  H3d: ...as the availability of digital resources increases.</p>
Al-Shahwani, T. M. (2020). Impact of AMO enhancing human resource management practices on sustainable competitive advantage in insurance companies in Qatar.	<p>H1: There is a significant impact of ability enhancing HRM practices on sustainable competitive advantage.  H2: There is a significant impact of motivation enhancing HRM practices on sustainable competitive advantage.  H3: There is a significant impact of opportunity enhancing HRM practices on sustainable competitive advantage.</p>
Andreeva, T., & Sergeeva, A. (2016). The more the better, or is it? The contradictory effects of HR practices on knowledge-sharing motivation and behaviour.	<p>Hypothesis 1: Intrinsic-motivation-enhancing HR practices influence individual knowledge-sharing behaviour indirectly by increasing the intrinsic motivation to share knowledge.  Hypothesis 2: Extrinsic-motivation-enhancing HR practices influence individual knowledge-sharing behaviour indirectly by (a) increasing the extrinsic motivation to share and (b) decreasing the intrinsic motivation to share.  Hypothesis 3: Ability-enhancing HR practices influence individual knowledge-sharing behaviour indirectly by increasing employee (a) ability to share knowledge and (b) intrinsic motivation to share knowledge.  Hypothesis 4: The impact of the (a) intrinsic motivation to share knowledge, (b) extrinsic motivation to share knowledge and the (c) ability to share knowledge on individual knowledge-sharing behaviour is stronger in organizations that provide more opportunity-enhancing HR practices compared with organizations that provide fewer opportunity-enhancing HR practices.</p>
Bayo-Moriones, A., & Bello-Pindado, A. (2021). Differences in the impact of AMO bundles of line managers and frontline workers on the performance of manufacturing firms.	<p>H1. The positive association between the ability bundle and manufacturing performance is greater for line managers than for frontline workers.  H2. The positive association between the motivation bundle and manufacturing performance is stronger for frontline workers than for line managers.  H3. The positive association between the opportunity bundle and manufacturing performance is stronger for line managers than for frontline workers.</p>
Bello-Pintado, A., & Garcés-Galdeano, L. (2019). Bundles of HRM practices in family and non-family firms: the impact on enhancing performance.	<p>H1a. The ability-enhancing (A) bundle of HRM practices have a stronger relationship with the enhancement of performance in FFs than in NFFs.  H1b. The opportunity-enhancing (O) bundles of HRM practices have a stronger relationship with the enhancement of performance in FFs than in NFFs  H1c. The motivation-enhancing (M) bundle of HRM practices has a stronger relationship with the enhancement of performance in NFFs than in FFs.  H2a. The positive interaction between the ability-enhancing (A) bundle and the opportunity-enhancing (O) bundle of HRM practices in explaining the enhancement of performance is expected to be higher in FFs than in NFFs.  H2b. The motivation-enhancing (M) bundle of HRM practices positively interact with both ability-enhancing (A) and opportunity-enhancing (O) to explain the enhancement of performance in NFFs but do not in FFs.</p>
Beltrán-Martín, I., & Bou-llusar, J. C. (2018). Examining the intermediate role of employee abilities, motivation, and opportunities to participate in the relationship between HR bundles and employee performance.	<p>Hypothesis 1a. Employee abilities have a positive effect on EP.  Hypothesis 1b. Employee motivation has a positive effect on EP  Hypothesis 1c. Employee opportunities to participate have a positive effect on employee performance.  Hypothesis 2a. The skill-enhancing HR bundle has a positive effect on employee abilities.  Hypothesis 2b. The skill-enhancing HR bundle has a positive effect on employee motivation.  Hypothesis 2c. The skill-enhancing HR bundle has a positive effect on employee opportunities to participate.  Hypothesis 3a. The motivation-enhancing HR bundle has a positive effect on employee motivation.  Hypothesis 3b. The motivation-enhancing HR bundle has a positive effect on employee opportunities to participate.  Hypothesis 4a. The opportunity-enhancing HR bundle has a positive effect on employee opportunities to participate.  Hypothesis 4b. The opportunity-enhancing HR bundle has a positive effect on employee abilities.  Hypothesis 4c. The opportunity-enhancing HR bundle has a positive effect on employee motivation.  Hypothesis 5. The skill-enhancing HR bundle positively moderates the influence of the motivation-enhancing HR bundle on employee AMO.  Hypothesis 6. The skill-enhancing HR bundle positively moderates the influence of the opportunity-enhancing HR bundle on employee AMO.  Hypothesis 7. The motivation-enhancing HR bundle positively moderates the influence of the opportunity-enhancing HR bundle on employee AMO.</p>
Bhatti et al., (2021). High-performance work systems, innovation, and knowledge sharing: An empirical analysis in the context of project-based organizations.	<p>H1a. Ability enhancing human resource practices are directly related to innovation performance in project-based organizations.  H1b. Motivation enhancing human resource practices are directly related to innovation performance in project-based organizations.  H1c. Opportunities enhancing human resource practices are directly related to innovation performance in project-based organizations.  H2a. Knowledge sharing mediates the relationship between ability enhancing human resource practices and innovation performance in project-based organizations.  H2b. Knowledge sharing mediates the relationship between motivation enhancing human resource practices and innovation performance in project-based organizations.  H2c. Knowledge sharing mediates the relationship between opportunity enhancing human resource practices and innovation performance in project-based organizations.</p>
Bos-Nehles et al., (2013). Employee perceptions of line management performance: Applying the AMO theory to explain the effectiveness of line managers' HRM implementation.	<p>Hypothesis 1: The greater the ability of line managers in terms of performing HRM practices, the more effectively they will implement these practices on the work floor  Hypothesis 2: The motivation to implement HRM practices effectively moderates the relationship between line managers' ability and their HRM implementation effectiveness.  Hypothesis 3: The opportunity provided to implement HR practices moderates the relationship between line managers' ability to implement and their HR implementation effectiveness.</p>
Bouwman et al., (2019). Stimulating teachers' team performance through team-oriented HR practices: the roles of affective team commitment and information processing.	<p>Hypothesis 1: Team-oriented HR practices are positively associated with affective team commitment and information processing.  Hypothesis 2: Affective team commitment is positively associated with information processing.  Hypothesis 3: Information processing is positively associated with teacher team innovation and efficiency  Hypothesis 4: Team-oriented HR practices are positively associated with team innovation and efficiency via their positive associations with affective team commitment and information processing.</p>
Chung, G. H., & Pak, J. (2021). Is there internal fit among ability-, motivation-, and opportunity-enhancing HR practices? Evidence from South Korea.	<p>Hypothesis 1 Ability-enhancing HR practices perceived by employees are positively related to individual performance.  Hypothesis 2 Motivation-enhancing HR practices perceived by employees are positively related to individual performance.  Hypothesis 3 Opportunity-enhancing HR practices perceived by employees are positively related to individual performance.  Hypothesis 4-1 Motivation-enhancing HR practices negatively moderate the relationship between ability-enhancing HR practices and individual performance.  Hypothesis 4-2 Motivation-enhancing HR practices negatively moderate the relationship between opportunity-enhancing HR practices and individual performance.  Hypothesis 4-3 Opportunity-enhancing HR practices positively moderate the relationship between ability-enhancing HR practices and individual performance</p>
Collins, C., & Kehoe, R. (2017). Examining strategic fit and misfit in the management of knowledge workers.	<p>Hypothesis 1: The engineering HR system will be positively related to firm performance for firms pursuing an exploration strategy and negatively related to firm performance for firms pursuing an exploitation strategy  Hypothesis 2: The bureaucratic HR system will be positively related to firm performance for firms pursuing an exploitation strategy and negatively related to firm performance for firms pursuing an exploration strategy  Hypothesis 3: The commitment HR system will be positively related to firm performance for firms pursuing an exploitation strategy and negatively related to firm performance for firms pursuing an exploration strategy</p>

<p>Dasí et al., (2021). Teams and Project Performance: An Ability, Motivation, and Opportunity Approach.</p>	<p>H1a: The multiplicative model is a better predictor of project performance than the additive model  <b>H1b: The constraining factor model is a better predictor of project performance than the additive model.</b>  H2a: When teams undertake simple projects, the constraining factor model is a better predictor of project performance than the multiplicative factor model.  H2b: When teams undertake complex projects, the multiplicative model is a better predictor of project performance than the con- straining factor model.  H3a: When a team undertakes simple projects, the constraining factor is the team's ability  H3b: When a team undertakes complex projects, motivation moderates the team's opportunities and its ability to perform by increasing the positive effects of team ability and team opportunity on performance.</p>
<p>Dastmalchian, A. et al. (2020). High-performance work systems and organizational performance across societal cultures.</p>	<p>Hypothesis 1: HPWS are positively associated with organizational performance in a diverse range of countries.  Hypothesis 2: Organizational performance in a diverse range of countries is positively associated with (a) skill-enhancing HR practices, (b) motivation-enhancing HR practices, and (c) opportunity-enhancing HR practices.  Hypothesis 3: The relationship between HPWS and organizational performance is (a) weaker in societal cultures with high power distance, and unaffected by (b) in-group collectivism and (c) institutional collectivism.  Hypothesis 4: The relationship between skill-enhancing practices and organizational performance is not moderated by societal culture dimensions of (a) power distance, (b) in- group collectivism, and (c) institutional collectivism.  Hypothesis 5: The relationship between motivation-enhancing practices and organizational performance is (a) negatively moderated by power distance, and not moderated by (b) in-group collectivism, and (c) institutional collectivism.  Hypothesis 6: The relationship between opportunity-enhancing practices and organizational performance is (a) negatively moderated by power distance, and not moderated by (b) in-group collectivism, and (c) institutional collectivism</p>
<p>Díaz-Fernández et al., (2020). Strength of HRM systems and perceived organizational support as determinants of employment relationships: The perspective of HR managers and workers' representatives.</p>	<p>H1.1. Employment Relationship ER1, defined by high values in both perceptions about HRM Strength and POS, will be characterized by AMO systems with high values in AMO Enhancing Practices.  H1.2. Employment Relationship ER1, defined by high values in both perceptions about HRM Strength and POS, will be characterized by a high level of OCB and a high level of IR.  H2.1. Employment Relationship ER3, defined by low values in both perceptions about HRM Strength and POS, will be characterized by AMO systems with low values in Abilities-, Motivation-, and Opportunity- Enhancing Practices.  H2.2. Employment Relationship ER3, defined by low values in both perceptions about HRM Strength and POS, will be characterized by a low level of OCB and a low level of IR.  H3.1. Employment Relationship ER2, defined by high values in perceptions about HRM Strength and low POS, will be characterized by AMO systems with values in Abilities-, Motivation-, and Opportunity-Enhancing Practices, lower than ER1.  H3.2. Employment Relationship ER2, defined by high values in perceptions about HRM Strength and low POS, will be characterized by a low level of OCB and a moderate level of IR  H4.1. Employment Relationship ER4, defined by low values in perceptions about HRM Strength and high POS, will be characterized by AMO systems with moderate values in Abilities-, Motivation-, and Opportunity- Enhancing Practices, higher than ER2. H4.2. Employment Relationship ER4, defined by low values in perceptions about HRM Strength and high POS, will be characterized by a moderate level of OCB and a low level of IR, lower than ER2  See article because there are 2 different studies (H1 and H2) and Empirical Items Table</p>
<p>Edgar et al., (2020). The HPWS and AMO: a dynamic study of system- and individual-level effects.</p>	<p>H1. The HPWS will be positively related to employees' contextual performance, which, in turn, will be positively related to employees' task performance.  <b>H2. Individual (a) ability, (b) motivation and (c) opportunity will be positively related to employees' contextual performance, which, in turn, will be positively related to employees' task performance.</b></p>
<p>Eib et al., (2020). What helps managers being fair? Predicting managers' self-reported justice enactment during pay setting using the ability-motivation-opportunity framework.</p>	<p><b>Hypothesis 1: Ability in the pay-setting context is positively related to managers' reported justice enactment. → supported for self-efficacy in the role as pay-setting manager and not supported for sufficient training for the role as pay-setting manager</b>  <b>Hypothesis 2: Motivation in the pay-setting context is positively related to managers' reported justice enactment.</b>  <b>Hypothesis 3: Opportunity in the pay-setting context is positively related to managers' reported justice enactment. → Supported for 3 of the 4 justice enactment dimensions.</b></p>
<p>Garmendia et al., (2021). High-involvement HRM, job satisfaction and productivity: A two wave longitudinal study of a Spanish retail company.</p>	<p><b>Hypothesis 1 Perceived HIWS at an earlier time point is positively related to subsequent store productivity.</b>  <b>Hypothesis 2 Store productivity at an earlier time point is positively related to subsequent perceived HIWS</b>  <b>Hypothesis 3 Perceived HIWS at an earlier time point is positively related to subsequent employee job satisfaction.</b>  <b>Hypothesis 4 Employee job satisfaction at an earlier time point is positively related to subsequent store productivity.</b>  <b>Hypothesis 5 Store productivity at an earlier time point is positively related to later employee job satisfaction levels.</b></p>
<p>Guerci et al., (2017). Empirical insights on the nature of synergies among HRM policies - An analysis of an ethics-oriented HRM system.</p>	<p><b>Hypothesis 1. The synergistic model of interaction among AMO policy domains (i.e. ethical ability-enhancing, ethical motivation-enhancing and the ethical opportunity-enhancing policy domains) better explains employees' perception of benevolent ethical climate than the model of independent effects.</b>  <b>Hypothesis 2. The synergistic model of interaction among AMO policy domains (i.e. ethical ability-enhancing, ethical motivation-enhancing and the ethical opportunity-enhancing policy domains) better explains employees' perception of principled ethical climate than the model of independent effects.</b></p>
<p>Hafeez et al., (2020). Examining the effect of high-performance human resource practices on team performance in development sector projects: Mediating role of trust.</p>	<p><b>Hypothesis H1a There is a positive relationship between ability- enhancing HPHRPs and team performance.</b>  <b>Hypothesis H1b There is a positive relationship between motivation- enhancing HPHRPs and team performance.</b>  <b>Hypothesis H1c There is a positive relationship between opportunity- enhancing HPHRPs and team performance.</b>  <b>Hypothesis H2a There is a positive relationship between ability- enhancing HPHRPs and trust.</b>  <b>Hypothesis H2b There is a positive relationship between motivation- enhancing HPHRPs and trust.</b>  <b>Hypothesis H2c There is a positive relationship between opportunity- enhancing HPHRPs and trust</b>  <b>Hypothesis H3a Trust mediates the relationship between ability- enhancing HPHRPs and team performance in a way that it enhances the impact of those HPHRPs and increases team performance.</b>  <b>Hypothesis H3b Trust mediates the relationship between motivation- enhancing HPHRPs and team performance in such a way that it strengthens the impact of those HPHRPs and increases team performance.</b>  <b>Hypothesis H3c Trust mediates the relationship between opportunity- enhancing HPHRPs and team performance in such a way that it strengthens the impact of those HPHRPs and increases team performance</b></p>
<p>Hassan et al., (2020). Managing the Obligation to Stay through Employee Involvement, Recognition and AMO Model: A Study Among Millennial Employees.</p>	<p><b>H1: Employee involvement is positively related to normative commitments.</b>  <b>H2: Employee recognition is positively related to normative commitment.</b>  <b>H3: The AMO model is positively related to the normative commitment.</b>  <b>H4: Employee involvement is positively related to the AMO model.</b>  <b>H5: Employee recognition is positively related to the AMO model.</b>  <b>H6: The AMO model mediates the relationship between employee involvement and normative commitment.</b>  <b>H7: The AMO model mediates the relationship between employee recognition and normative commitment.</b></p>
<p>Ho, H., &amp; Kuvaas, B. (2020). Human resource management systems, employee well-being, and firm performance from the mutual gains and critical perspectives: The well-being paradox.</p>	<p><b>Hypothesis 1: The positive relationship between HRM systems and firm performance is greater for HRM systems than for individual HRM practices in isolation</b>  <b>Hypothesis 2a: HRM systems are positively associated with employee well-being.</b>  <b>Hypothesis 2b: HRM systems are negatively associated with employee well-being.</b>  <b>Hypothesis 3: The relationship between HRM systems and (a) firm performance and (b) well-being is curvilinear, with positive effects at low to moderate levels of implementation but negative effects at higher levels.</b>  <b>Hypothesis 4a: Interaction among skills, opportunity, and motivation bundles will be associated with higher firm performance than each bundle taken in isolation, reflecting the notion of positive synergy.</b>  <b>Hypothesis 4b: Interaction among skills, opportunity, and motivation bundles will be associated with higher well-being than each bundle taken in isolation, reflecting the notion of positive synergy.</b>  <b>Hypothesis 5a: Interaction among skills, opportunity, and motivation bundles will be associated with lower firm performance than each bundle taken in isolation, reflecting the notions of substitutes and negative synergy.</b>  <b>Hypothesis 5b: Interaction among skills, opportunity, and motivation bundles will be associated with lower well-being than each bundle taken in isolation, reflecting the notions of substitutes and negative synergy</b></p>
<p>Hosseingholizadeh et al., (2016). The role of motivation, ability, and opportunity in achieving effective knowledge-work: Knowledge work and MAO.</p>	<p><b>Hypothesis 1: Intrinsic and Extrinsic motivation will be positively related to knowledge-work, such that employees performing knowledge-work are more motivated by intrinsic motivators than extrinsic motivators.</b>  <b>Hypothesis 2: Ability is positively related to knowledge-work such that this relationship will be stronger for employees of high-ability than those with low ability.</b>  <b>Hypothesis 3: ability has a mediator role in the relationship between motivation and knowledge-work.</b>  <b>Hypothesis 4: Opportunity is positively related to knowledge-work such that this relationship will be stronger for employees of high- time availability than those low in time availability.</b>  <b>Hypothesis 5: the multiplicative interaction among motivation, ability and opportunity will not explain significantly more variance than the linear model</b></p>
<p>Jyoti, J., &amp; Rani, A. (2017). High performance work system and organisational performance: role of knowledge management. Personnel Review, 46(8), 1770–1795. <a href="https://doi.org/10.1108/PR-10-2015-0262">https://doi.org/10.1108/PR-10-2015-0262</a></p>	<p><b>H1. High performance work system positively affects organizational performance.</b>  <b>H2. High performance work system positively affects knowledge management.</b>  <b>H3. Knowledge management positively affects organizational performance</b>  <b>H4. Knowledge management mediates the relationship between high performance work system and organizational performance</b></p>

<p>Katou, A. A. (2017). How does human resource management influence organisational performance? An integrative approach-based analysis.</p>	<p>H1a. Business strategies positively influence HRM systems.  H1b. Business strategies positively influence actual HR practices.  H1c. Business strategies positively influence features of HR practices.  H2a. Features of HR practices mediate (fully or partially) the relationship between actual HR practices and HR practices as experienced.  H2c. HRM process mediates the relationship between business strategies and HRM as experienced.  H2d. HRM content mediates the relationship between business strategies and HRM process  H3a. Employee attitudes and employee behaviour serially mediate (fully or partially) the relationship between HR practices as experienced and operational performance.  H3b. HR practices as experienced positively influence organizational performance.  H3c. Employee attitudes mediate (fully or partially) the relationship between HR practices as experienced and employee behaviour.  H3d. Employee behaviour mediates (fully or partially) the relationship between employee attitudes and operational performance.</p>
<p>Kengatharan, N. (2020). Firm performance: HR practices and IT.</p>	<p>H 1: There is a positive relationship between HRM practices and firm performance  H 2: The usage of IT moderates the relationship between HRM practices and firm performance such the positive relationship between HRM practices and firm performance will be stronger at a high usage of IT than at low usage</p>
<p>Kloutsiniotis, P. V. &amp; Mihail, D. M. (2017). Linking innovative human resource practices, employee attitudes and intention to leave in healthcare services.</p>	<p>H1. HPWS will be positively related to employees' job satisfaction.  H2. HPWS will be positively related to employees' affective commitment.  H3. Job satisfaction will mediate the positive relationship between HPWS and employees' affective commitment  H4. HPWS will be positively related to employees' engagement  H5. Employees' engagement in the Greek healthcare context will mediate the relationship between HPWS and affective commitment.  Intention  H6. HPWS will be negatively associated with employees' intentions of leaving the hospital.  H7. Engagement will mediate the relationship between HPWS and intention to leave in the Greek healthcare context.  H8. Job satisfaction will mediate the relationship between HPWS and intention to leave.</p>
<p>Kundu et al., (2018). Ability-motivation-opportunity enhancing human resource practices and firm performance: Evidence from India.</p>	<p>Hypothesis 1a: Ability-enhancing HR practices are positively related to affective commitment.  Hypothesis 1b: Motivation-enhancing HR practices are positively related to affective commitment.  Hypothesis 1c: Opportunity-enhancing HR practices are positively related to affective commitment.  Hypothesis 2a: Ability-enhancing HR practices are positively related to firm performance.  Hypothesis 2b: Motivation-enhancing HR practices are positively related to firm performance.  Hypothesis 2c: Opportunity-enhancing HR practices are positively related to firm performance.  Hypothesis 3: Affective commitment is positively related to firm performance.  Hypothesis 4a: The positive relationship between ability-enhancing HR practices and firm performance is mediated by affective commitment.  Hypothesis 4b: The positive relationship between motivation-enhancing HR practices and firm performance is mediated by affective commitment.  Hypothesis 4c: The positive relationship between opportunity-enhancing HR practices and firm performance is mediated by affective commitment</p>
<p>Latorre et al., (2016). High commitment HR practices, the employment relationship and job performance: A test of a mediation model.</p>	<p>H1. High commitment HR practices will be positively associated with perceived organizational support.  H2. High commitment HR practices will be positively associated with greater fulfilment of the psychological contract.  H3. High commitment HR practice will be positively associated with perceived job security.  H4. High commitment HR practices will be positively associated with job satisfaction.  H5. POS will be positively associated with job satisfaction.  H6. Fulfilment of the psychological contract will be positively associated with job satisfaction.  H7. Perceived job security will be positively associated with job satisfaction.  H8. Perceived organizational support, fulfilment of the psychological contract and job security will be partial mediators of the relationship between HR practices and job satisfaction.  H9. Job satisfaction will be positively associated with employee performance.  H10. Job satisfaction will mediate the relationship between perceptions of organizational support, fulfilment of the psychological contract and job security and performance  H11. Job satisfaction will be negatively associated with absenteeism.  H12. Job satisfaction will mediate the relationship between perceived organizational support, fulfilment of the psychological contract and job security and absenteeism</p>
<p>Ma et al., (2017). Why do high-performance human resource practices matter for team creativity? The mediating role of collective efficacy and knowledge sharing.</p>	<p>Hypothesis 1a Team members' collective efficacy mediates the cross-level relationship between ability-enhancing HR practices and team creativity.  Hypothesis 1b Team members' collective efficacy mediates the cross-level relationship between motivation-enhancing HR practices and team creativity.  Hypothesis 2a Team members' knowledge sharing mediates the cross-level relationship between motivation-enhancing HR practices and team creativity.  Hypothesis 2b Team members' knowledge sharing mediates the cross-level relationship between opportunity-enhancing HR practices and team creativity</p>
<p>Malik, P., &amp; Lenka, U. (2019). Exploring the impact of perceived AMO framework on constructive and destructive deviance: Mediating role of employee engagement.</p>	<p>H1. Perceived (a) abilities, (b) motivation and (c) opportunities enhancing HRM practices exhibit a significant negative relationship with destructive deviance.  H2. Perceived (a) abilities, (b) motivation and (c) opportunities enhancing HRM practices exhibit a significant positive relationship with constructive deviance.  H3. Perceived (a) abilities, (b) motivation and (c) opportunities enhancing HRM practices exhibit a significant positive relationship with employee engagement  H4. Employee engagement significantly mediates the relationship between perceived (a) abilities, (b) motivation and (c) opportunity enhancing HRM practices and destructive deviance.  H5. Employee engagement significantly mediates the relationship between perceived (a) abilities, (b) motivation and (c) opportunity enhancing HRM practices and constructive deviance.</p>
<p>Miao et al., (2021). High-performance work systems and key employee attitudes: the roles of psychological capital and an interactional justice climate.</p>	<p>Hypothesis 1: Organization-level HPWS will be positively related to individual employees' PsyCap.  Hypothesis 2: PsyCap will be positively related to job satisfaction (H2a) and affective organizational commitment (H2b).  Hypothesis 3: PsyCap will mediate the cross-level relationship between organization-level HPWS and individual employees' job satisfaction (H3a) and affective organizational commitment (H3b).  Hypothesis 4: Interactional justice climate will moderate the cross-level relationship between HPWS and PsyCap in such a way that when the interactional justice climate is high the relationship between HPWS and PsyCap will be stronger.  Hypothesis 5: The interactional justice climate will strengthen the indirect effects of HPWS on employee job satisfaction (H5a) and affective organizational commitment (H5b) through PsyCap, in such a way that when the interactional justice climate is high HPWS will have a stronger relationship with employee attitudes.</p>
<p>Morales-Sanchez, R., &amp; Pasamar, S. (2019). How to improve organisational citizenship behaviour by combining ability, motivation, and opportunity The moderator role of perceived organisational support.</p>	<p>H1. AMO practices are positively related to OCB.  H1a. Ability-enhancing practices are positively related to OCB  H1b. Motivation-enhancing practices are positively related to OCB.  H1c. Opportunity-enhancing practices are positively related to OCB.  H2. POS strengthens the relationship between AMO practices and OCB</p>
<p>Muisyo et al., (n.d.). Implications of GHRM on organisational citizenship behaviour: the mediating role of enablers of green culture.</p>	<p>H1a. Green abilities are positively related to leadership emphasis.  H1b. Green abilities are positively related to message credibility.  H1c. Green abilities are positively related to peer involvement.  H1d. Green abilities are positively related to employee empowerment.  H2a. Green motivation is positively related to leadership emphasis.  H2b. Green motivation is positively related to message credibility.  H2c. Green motivation is positively related to peer involvement.  H2d. Green motivation is positively related to employee empowerment  H3a. Green opportunities are positively related to leadership emphasis.  H3b. Green opportunities are positively related to message credibility.  H3c. Green opportunities are positively related to peer involvement.  H3d. Green opportunities are positively related to employee empowerment.  H4a. Leadership emphasis is positively related to OCB.  H4b. Message credibility is positively related to OCB.  H4c. Peer involvement is positively related to OCB.  H4d. Employee empowerment is positively related to OCB</p>
<p>Nguyen et al., (2020). The impact of human resource management activities on the compatibility and work results.</p>	<p>H1. Suitability (a), Sacrifice (b) and Connection (c) in the organization have a positive effect on Work results.  H2. HRM activities of ability improvement have a positive effect on the job suitability, sacrifice and connection.  H3. HRM activities of motivation improvement have a positive effect on the job suitability, sacrifice and connection.  H4. HRM activities of opportunity improvement have a positive effect on the job suitability, sacrifice and connection.</p>
<p>Obeidat et al., (2016). The link between high performance work practices and organizational performance: Empirically validating the conceptualization of HPWP according to the AMO model.</p>	<p>H1. There is a positive relationship between ability-enhancing practices and organizational performance.  H2. There is a positive relationship between motivation-enhancing practices and organizational performance.  H3. There is a positive relationship between opportunity-enhancing practices and organizational performance</p>



Obeidat, S. M. (2017). An examination of the moderating effect of electronic-HRM on high-performance work practices and organisational performance link.	H1. There is a significant positive relationship between HPWP and organizational performance. H2. There is a significant positive relationship between e-HRM and organizational performance. H3. e-HRM use positively moderates the relationship between HPWP and organizational performance.
Olló-López et al., (2016). Disentangling the relationship between high-involvement-work-systems and job satisfaction.	H1. Employees working under HIWS show higher levels of job satisfaction. H2. An interesting job mediates the influence of HIWS on job satisfaction, so workers under HIWS perceive their job as more interesting and this perception results in a higher level of job satisfaction H3a. Involuntary effort mediates the influence of HIWS on job satisfaction, in such a way that HIWS make employees increase their involuntary effort and this increase results in a lower level of job satisfaction. H3b. Voluntary effort mediates the influence of HIWS on job satisfaction, so that workers under HIWS increase their voluntary effort and this increase results in a higher level of job satisfaction. H4. Wages mediate the influence of HIWS on job satisfaction; thus, workers under HIWS receive higher wages and higher wages increase job satisfaction.
Pham et al., (2020). The role of green human resource management in driving hotel's environmental performance: Interaction and mediation analysis.	H1. Green training (H1a), green performance management (H1b), and green employee involvement (H1c) have a positive influence on EEC. H2. Green training (H2a), green performance management (H2b), and green employee involvement (H2c) have a positive influence on OCBE. H3. Green training (H3a), green performance management (H3b), and green employee involvement (H3c) have a positive influence on CEP. H4. EEC mediates the influences of green training (H4a), green performance management (H4b), and green employee involvement (H4c) on CEP. H5. OCBE mediates the influences of green training (H5a), green performance management (H5b), and green employee involvement (H5c) on CEP. H6. There is (are) two-way interactive influence(s) of green training and green performance management (H6a) and green employee involvement (H6b) on CEP. H7. There is a three-way interactive influence of green training, green performance management, and green employee involvement on CEP.
Raineri, A. (2017). Linking human resources practices with performance: the simultaneous mediation of collective affective commitment and human capital.	Hypothesis 1: Skill enhancement practices should make a stronger contribution to the human capital mediation path when compared to their contribution to the affective commitment path. Hypothesis 2: Motivation enhancement practices should make a stronger contribution to the affective commitment mediation path when compared to their contribution to the human capital path. Hypothesis 3: Empowerment enhancement practices should make a stronger contribution to the affective commitment mediation path when compared to their contribution to the human capital paths. Hypothesis 4: There is a positive direct relationship between subsets of HPWS practices and business unit performance that accounts for the variance in the HPWS–performance relationship that is not explained by the affective commitment and human capital paths.
Rayner, J., & Morgan, D. (2018). An empirical study of 'green' workplace behaviours: ability, motivation, and opportunity.	Hypothesis 1a: Pro-environmental AMO is positively related to green employee behaviours at work. Hypothesis 1b: Pro-environmental AMO is positively related to green employee behaviours in the home. Hypothesis 1c: Green behaviours are more prevalent in the home than the workplace. Hypothesis 2: Environmental knowledge is positively related to green behaviour. Hypothesis 3a: Line managers moderate the relationship between pro-environmental AMO and green behaviours in the workplace. Hypothesis 3b: Line managers moderate the relationship between environmental knowledge and green behaviours in the workplace Hypothesis 4: Industry type moderates the relationship between pro-environmental AMO and green behaviours in the workplace
Rincon-Roldan, F., & Lopez-Cabrales, A. (2021). Linking organisational values and sustainability: the role of AMO practices.	H1. Perceived support is positively associated with business sustainability. H2. Respect is positively associated with business sustainability H3. Responsibility is positively associated with business sustainability H4. The AMO practices have a positive mediating effect on the relationship between organizational values and business sustainability. H4a. AMO practices have a positive mediating effect on the relationship between perceived support and business sustainability. H4b. AMO practices have a positive mediating effect on the relationship between respect and business sustainability. H4c. AMO practices have a positive mediating effect on the relationship between responsibility and business sustainability.
Rizvi, Y. S., & Garg, R. (2021). The simultaneous effect of green ability-motivation-opportunity and transformational leadership in environment management: the mediating role of green culture.	H1. GAMO has a significant impact on the EP of organizations. H2. GTFL improves the EP of organizations. H3. GC improves the firm's EP H4. GAMO leads to the creation of GC in organizations. H5. GC mediates between GAMO and EP H6. GTFL leads to the creation of GC in organizations. H7. GC mediates between GTFL and EP
Salas-Vallina et al., (2021). Well-being in times of ill-being: how AMO HRM practices improve organizational citizenship behaviour through work-related well-being and service leadership.	Hypothesis 1a: Pro-environmental AMO is positively related to green employee behaviours at work. Hypothesis 1b: Pro-environmental AMO is positively related to green employee behaviours in the home. Hypothesis 1c: Green behaviours are more prevalent in the home than the workplace. Hypothesis 2: Environmental knowledge is positively related to green behaviour. Hypothesis 3a: Line managers moderate the relationship between pro-environmental AMO and green behaviours in the workplace. Hypothesis 3b: Line managers moderate the relationship between environmental knowledge and green behaviours in the workplace Hypothesis 4: Industry type moderates the relationship between pro-environmental AMO and green behaviours in the workplace
Schouteten et al., (2021). More roads lead to rome. Hr configurations and employee sustainability outcomes in public sector organizations.	H1. Perceived support is positively associated with business sustainability. H2. Respect is positively associated with business sustainability H3. Responsibility is positively associated with business sustainability H4. The AMO practices have a positive mediating effect on the relationship between organizational values and business sustainability. H4a. AMO practices have a positive mediating effect on the relationship between perceived support and business sustainability. H4b. AMO practices have a positive mediating effect on the relationship between respect and business sustainability. H4c. AMO practices have a positive mediating effect on the relationship between responsibility and business sustainability.
Shahzad et al., (2019). Unpacking the relationship between high-performance work systems and innovation performance in SMEs.	H1. GAMO has a significant impact on the EP of organizations. H2. GTFL improves the EP of organizations. H3. GC improves the firm's EP H4. GAMO leads to the creation of GC in organizations. H5. GC mediates between GAMO and EP H6. GTFL leads to the creation of GC in organizations. H7. GC mediates between GTFL and EP
Shin et al., (2018). Do high-involvement HRM practices matter for worker creativity? a cross-level approach.	Hypothesis 1: HI HRM practices are positively associated with individual intrinsic job motivation Hypothesis 2: Learning orientation moderates the relationship between HI HRM practices and intrinsic job motivation in such way that for employees with high learning orientation, HI HRM practices have a stronger, positive relationship with intrinsic job motivation than for those with low learning orientation. Hypothesis 3: HI HRM practices are positively associated with worker creativity. Hypothesis 4: Intrinsic job motivation mediates the relationship between HI HRM practices and worker creativity Hypothesis 5: The interaction between HI HRM practices and employee learning orientation on worker creativity is mediated by intrinsic job motivation
Siddique et al., (2019). The role of relational coordination in the relationship between high-performance work systems (HPWS) and organizational performance.	H1. Relational coordination partially mediates the workplace-level relationship between HPWS, as whole systems, and performance outcomes. H2. Relational coordination partially mediates the workplace-level relationship between opportunity-enhancing HR practices and performance outcomes. H3. Relational coordination partially mediates the following workplace-level relationships: (H3a) between skill-enhancing HR practices and performance outcomes, and (H3b) between motivation-enhancing HR practices and performance outcomes.
Singh et al., (2020). Green innovation and environmental performance: The role of green transformational leadership and green human resource management.	H1. GTFL positively influences employee's green ability. H2. GTFL positively influences employee's green motivation. H3. GTFL positively influences employee's green opportunity. H4. Employee's green ability positively influences green innovation. H5. Employee's green motivation positively influences green innovation. H6. Employee's green opportunity positively influences green innovation H7. Green innovation positively influences environmental performance. H8. GTFL indirectly but positively influences green innovation through employee's green ability. H9. GTFL indirectly but positively influences green innovation through employee's green motivation. H10. GTFL indirectly but positively influences green innovation through employee's green opportunity. H11. Employee's green ability indirectly but positively influences environmental performance through green innovation. H12. Employee's green motivation indirectly but positively influences environmental performance through green innovation. H13. Employee's green opportunities indirectly but positively influences environmental performance through green innovation.
Song et al., (2020). The effects of high-involvement work systems and shared leadership on team creativity: A multilevel investigation.	Hypothesis 1: HIWS are positively related to team creativity. Hypothesis 2: HIWS are positively related to shared leadership Hypothesis 3: Involvement climate mediates the relationship between HIWS and shared leadership Hypothesis 4: Shared leadership is positively related to team creativity. Hypothesis 5: Shared leadership mediates the relationship between involvement climate and team creativity. Hypothesis 6: Involvement climate and shared leadership will play a chain-mediating role in the relationship between high-involvement work systems and team creativity



<p>Tarifa Fernández et al., (2021). Examining the moderating role of HIHRP in the relationship between external integration and productivity.</p>	<p>H1a. Ability-enhancing practices have a positive moderating effect on the relationship between CI and productivity.  H1b. Ability-enhancing practices have a positive moderating effect on the relationship between SI and productivity.  H2a. Motivation-enhancing practices have a positive moderating effect on the relationship between CI and productivity.  H2b. Motivation-enhancing practices have a positive moderating effect on the relationship between SI and productivity.  H3a. Opportunity-enhancing practices have a positive moderating effect on the relationship between CI and productivity.  H3b. Opportunity-enhancing practices have a positive moderating effect on the relationship between SI and productivity.</p>
<p>Tay et al., (2017). The power of ability-motivation-opportunity enhancing human resource management practices on organizational ethical climate. International</p>	<p>H1: Ability enhancing human resource management practices has significant relationship with organizational ethical climate  H2: Motivation enhancing human resource management practices has significant relationship with organizational ethical climate  H3: Opportunity enhancing human resource management practices has significant relationship with organizational ethical climate</p>
<p>Tensay, A. T., &amp; Singh, M. (2020). The nexus between HRM, employee engagement and organizational performance of federal public service organizations in Ethiopia.</p>	<p>Hypothesis 1. There is a positive and significant relationship between HRM system and organizational performance  Hypothesis 1A. There is a positive and a significant relationship between the individual HR practices (Recruitment and Selection, Training and Development, Performance Appraisal, Compensation and Reward; Autonomy and Employee Participation) and organizational performance  Hypothesis 2. There is a positive and significant relationship between HRM and employee engagement.  Hypothesis 2A. There is a positive and a significant relationship between the individual HR practices (Recruitment and Selection, Training and Development, Performance Appraisal, Compensation and Reward; Autonomy and Employee Participation) and employee engagement  Hypothesis 3. There is a positive and significant relationship between employee engagement and organizational performance.  Hypothesis 4. Employee engagement can mediate the relationship between HRM and organizational performance in Ethiopian public service</p>
<p>Tian et al., (2016). Staying and performing: How human resource management practices increase job embeddedness and performance.</p>	<p>H1. On-the-job fit (a), sacrifice (b) and links (c) are positively related to employees' job performance  H2a. Ability-enhancing HRM practices positively relate to the fit, links and sacrifice dimensions of job embeddedness.  H2b. Motivation-enhancing HRM practices positively relate to the fit, sacrifice and links dimensions of job embeddedness.  H2c. Opportunity-enhancing HRM practices positively relate to the fit, sacrifice and links dimensions of job embeddedness.  H3. On-the-job fit (a), sacrifice (b) and links (c) mediate the positive relationships between ability enhancing HRM and job performance.  H4. On-the job fit (a), sacrifice (b) and links (c) mediate the positive relationships between motivation-enhancing HRM and job performance.  H5. On-the-job fit (a), sacrifice (b) and links (c) mediate the positive relationships between opportunity enhancing HRM and job performance.</p>
<p>Vermeeren, B. (2017). Influencing public sector performance: studying the impact of ability-, motivation- and opportunity-enhancing human resources practices on various performance outcomes in the public sector.</p>	<p>H1: The relationship between ability-enhancing HR practices and organizational performance outcomes is partially mediated by job satisfaction.  H2a: The relationship between motivation-enhancing HR practices and organizational performance outcomes is fully mediated by job satisfaction.  H2b: The relationship between opportunity-enhancing HR practices and organizational performance outcomes is fully mediated by job satisfaction.  H3: Ability-enhancing and opportunity-enhancing HR practices are more positively related to HRM outcomes and organizational performance outcomes than motivation-enhancing HR practices.</p>
<p>Yasir, M., &amp; Majid, A. (2020). High-involvement HRM practices and innovative work behavior among production-line workers: mediating role of employee's functional flexibility.</p>	<p>H1. HI HRM practices positively predict employees' FF.  H1a. AE-HR practices positively predict employees' FF.  H1b. ME-HR practices positively predict employees' FF.  H1c. OE-HR practices positively predict employees' FF.  H2. HI HRM practices positively predict IWB.  H2a. AE-HR practices positively predict IWB.  H2b. ME-HR practices positively predict IWB.  H2c. OE-HR practices positively predict IWB.  H3. Association between HI HRM practices and IWB is positively mediated by Employees' FF.  H3a. Association between AE-HR practices and IWB is positively mediated by Employees' FF.  H3b. Association between ME-HR practices and IWB is positively mediated by Employees' FF.  H3c. Association between OE-HR practices and IWB is positively mediated by Employees' FF.</p>
<p>Zhang et al., (2020). How do human resource management practices affect employee well-being? A mediated moderation model</p>	<p>H1a. Ability-enhancing HRMPs have a positive effect on employees' well-being  H1b. Motivation-enhancing HRMPs have a positive effect on employees' well-being. Opportunity-enhancing  H1c. Opportunity-enhancing HRMPs have a positive effect on employees' well-being.  H2. HRMPs have a positive impact on the sense of organizational justice.  H3. HRMPs promote organizational justice (including procedural justice, distribution justice, interpersonal justice, and informational justice), which has a positive impact on employees' well-being, that is, organizational justice plays a mediating role between HRMPs and EWB.  H4. Integrity leadership positively moderates the effect of HRMPs on EWB, that is, when the level of integrity leadership is higher, the positive effect of HRMPs on employees' well-being is stronger than that of organizations with lower integrity leadership.  H5. Integrity leadership positively moderates the mediating effect that organizational justice has in the relationship between HRMPs and EWB, that is, compared with the organization with low levels of integrity leadership, when working in the organization with high integrity leadership, employees would feel more sense of organizational justice, and HRMPs would have a stronger impact on EWB.</p>